WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
OREGON

UNITED STATES DEPARTMENT of AGRICULTURE···SOIL CONSERVATION SERVICE

and

OREGON STATE UNIVERSITY

and

STATE ENGINEER of OREGON

Data included in this report were obtained by the agencies named above in cooperation with other Federal, State and private organizations.

AS OF
APR. 1, 1964

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Water Supply Forecasting Unit, Soil Conservation Service, P.O. Box 2807, Portland, Oregon 97208.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
Western United States	Monthly (Feb.-May)	Portland, Oregon	All Cooperators
Basic Data Summary	October 1	Portland, Oregon	All Cooperators
STATES			
Alaska	Monthly (Mar.-May)	Palmer, Alaska	Alaska S.C.D.
Arizona	Semi-Monthly (Jan.15 - Apr.1)	Phoenix, Arizona	Salt R. Valley Water Users Assoc. Ariz. Agr. Exp. Station
Colorado and New Mexico	Monthly (Feb.-May)	Fort Collins, Colorado	Colo. State University Colo. State Engineer N. Mex. State Engineer
Idaho	Monthly (Jan.-June)	Boise, Idaho	Idaho State Reclamation Engineer
Montana	Monthly (Jan.-June)	Bozeman, Montana	Mont. Agr. Exp. Station
Nevada	Monthly (Jan.-May)	Reno, Nevada	Nevada Dept. of Conservation and Natural Resources - Division of Water Resources
Oregon	Monthly (Jan.-June)	Portland, Oregon	Oreg. State University Oregon State Engineer
Utah	Monthly (Jan.-June)	Salt Lake City, Utah	Utah State Engineer
Washington	Monthly (Feb.-June)	Spokane, Washington	Wn. State Dept. of Conservation
Wyoming	Monthly (Feb.-June)	Casper, Wyoming	Wyoming State Engineer

PUBLISHED BY OTHER AGENCIES

REPORTS	ISSUED	AGENCY
British Columbia	Monthly (Feb.-June)	Water Resources Service, Dept. of Lands, Forest and Water Resources, Parliament Bldg., Victoria, B.C., Canada
California	Monthly (Feb.-May)	Calif. Dept. of Water Resources, P.O. Box 388, Sacramento, Calif.

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WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
OREGON

ISSUED

APRIL 8, 1964

Report prepared by

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and

BOB L. WHALEY, Assistant Snow Survey Supervisor

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Issued by

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STATE CONSERVATIONIST
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OREGON AGRICULTURAL
EXPERIMENT STATION

CHRIS L. WHEELER
STATE ENGINEER
STATE OF OREGON

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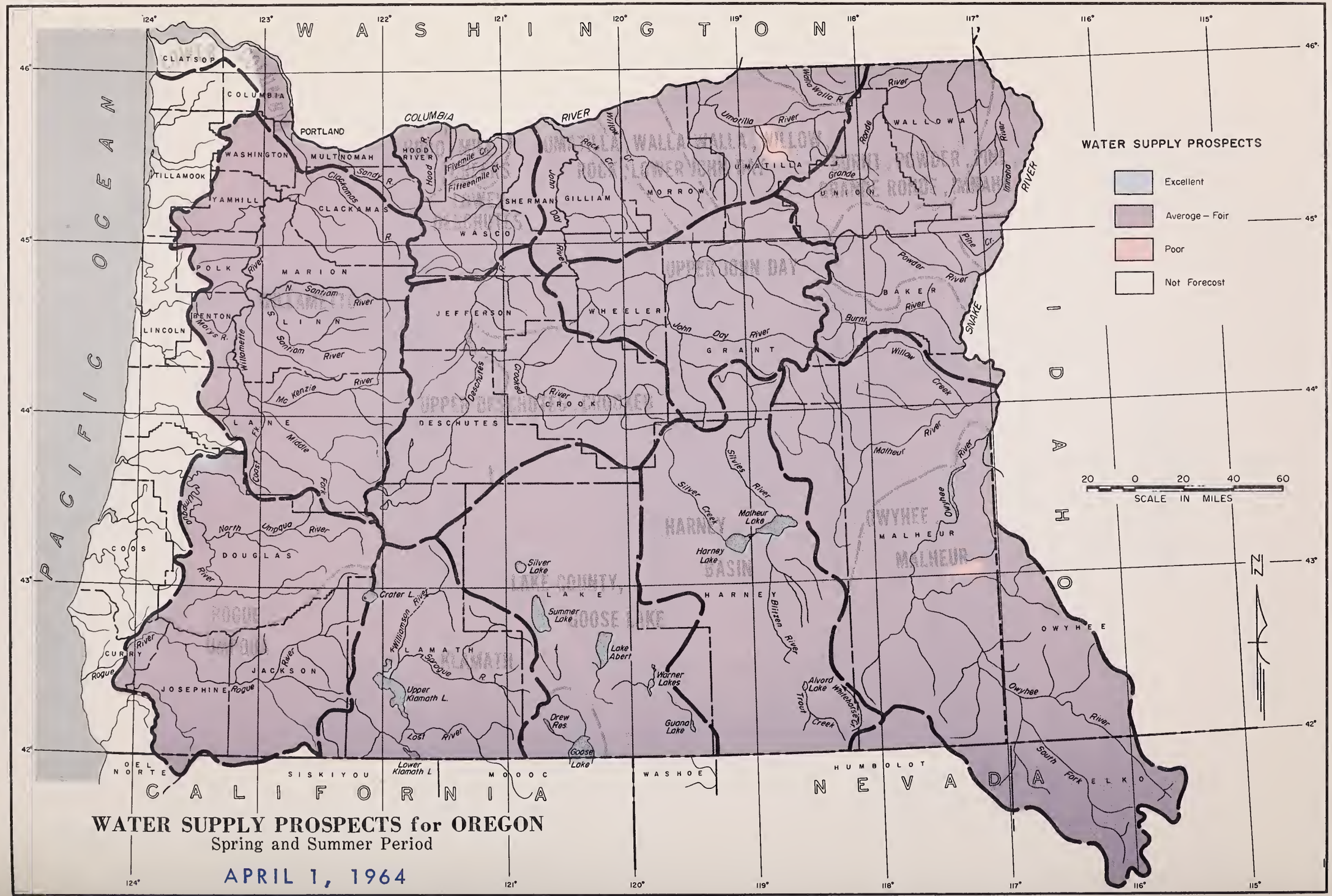


WATER SUPPLY PROSPECTS for OREGON

Spring and Summer Period

APRIL 1, 1964

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

7-0-19102-1-L

WATER SUPPLY OUTLOOK for OREGON

APRIL 1, 1964

Statewide the water supply outlook for the 1964 Oregon irrigation season is adequate for nearly all lands. A major exception is the area served from the McKay Reservoir near Pendleton and from Antelope Reservoir near Jordan Valley where stored water is much below average and some shortages are expected.

SNOW COVER

Water content of the mountain snowpack had a near maximum of record increase during January followed by a very deficient snowfall in February. March brought a good increase, especially in the earlier part of the month, and water content now varies between 94 percent average on Harney Basin watersheds to a high of 158 percent on Lake County watersheds.

SOIL MOISTURE

Watershed soils under the snowpack are generally well recharged with moisture and will absorb relatively small amounts of water during the runoff.

RESERVOIR STORAGE

Water stored in 24 Oregon reservoirs totals 82 percent of the 1943-57 average for April 1st. This will be an adequate supply for all but those lands served from McKay Reservoir near Pendleton and Antelope Reservoir near Jordan Valley where some shortages may be expected.

STREAMFLOW

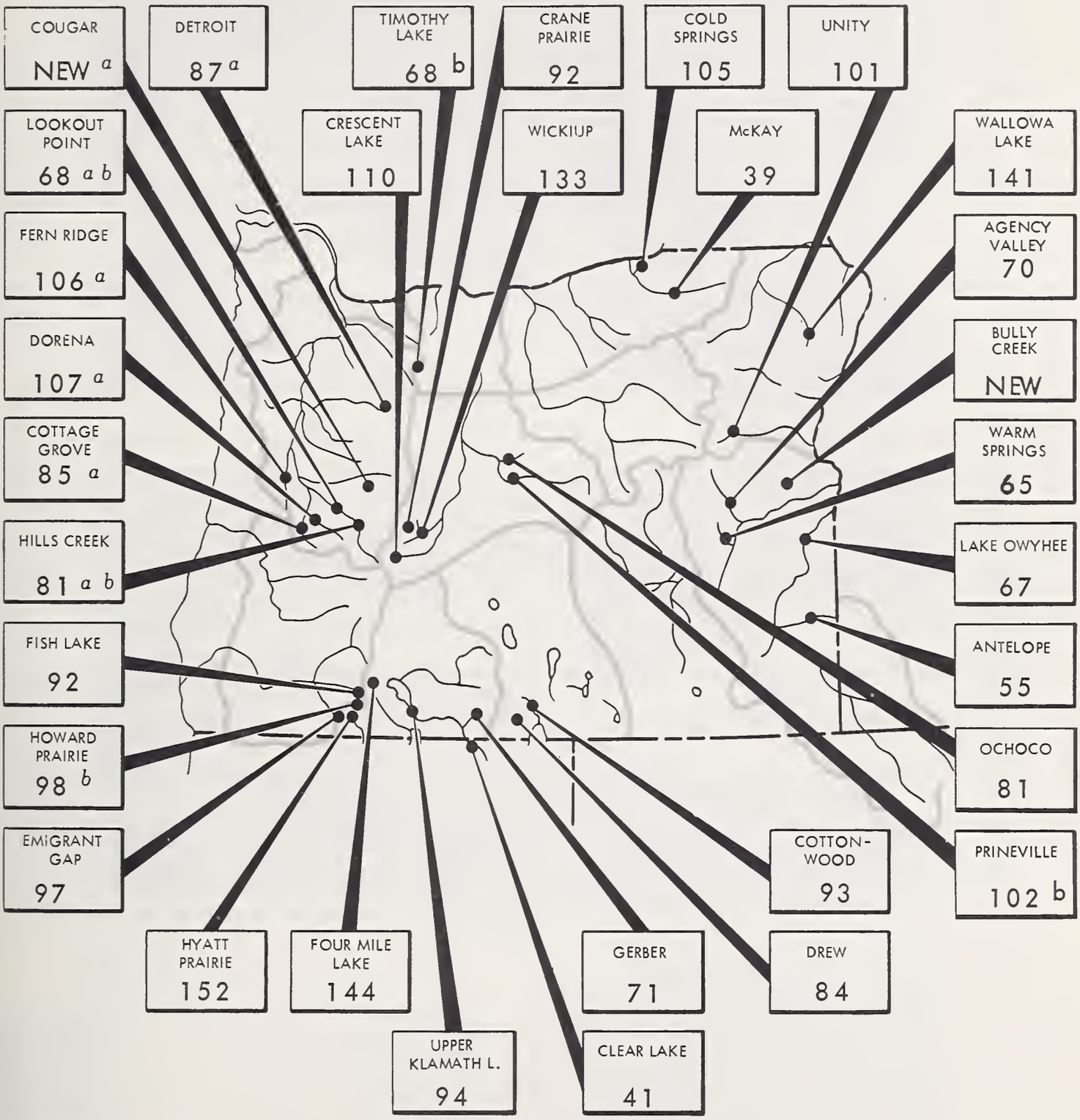
Forecasts for spring and summer streamflow have been increased because of good March increases in the snowpack and now vary from a low of 86 percent average on Wallowa River tributaries and Malheur River up to highs of 110 percent for inflow to Drews Valley Reservoir near Lakeview.

The flow of most small streams heading in low to medium elevation watersheds will be of about average volume and duration this season.

U.S. DEPARTMENT of AGRICULTURE
SOIL CONSERVATION SERVICE
CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY

STORAGE STATUS of OREGON RESERVOIRS as percent of 1943-57, 15 year average

APRIL 1, 1964



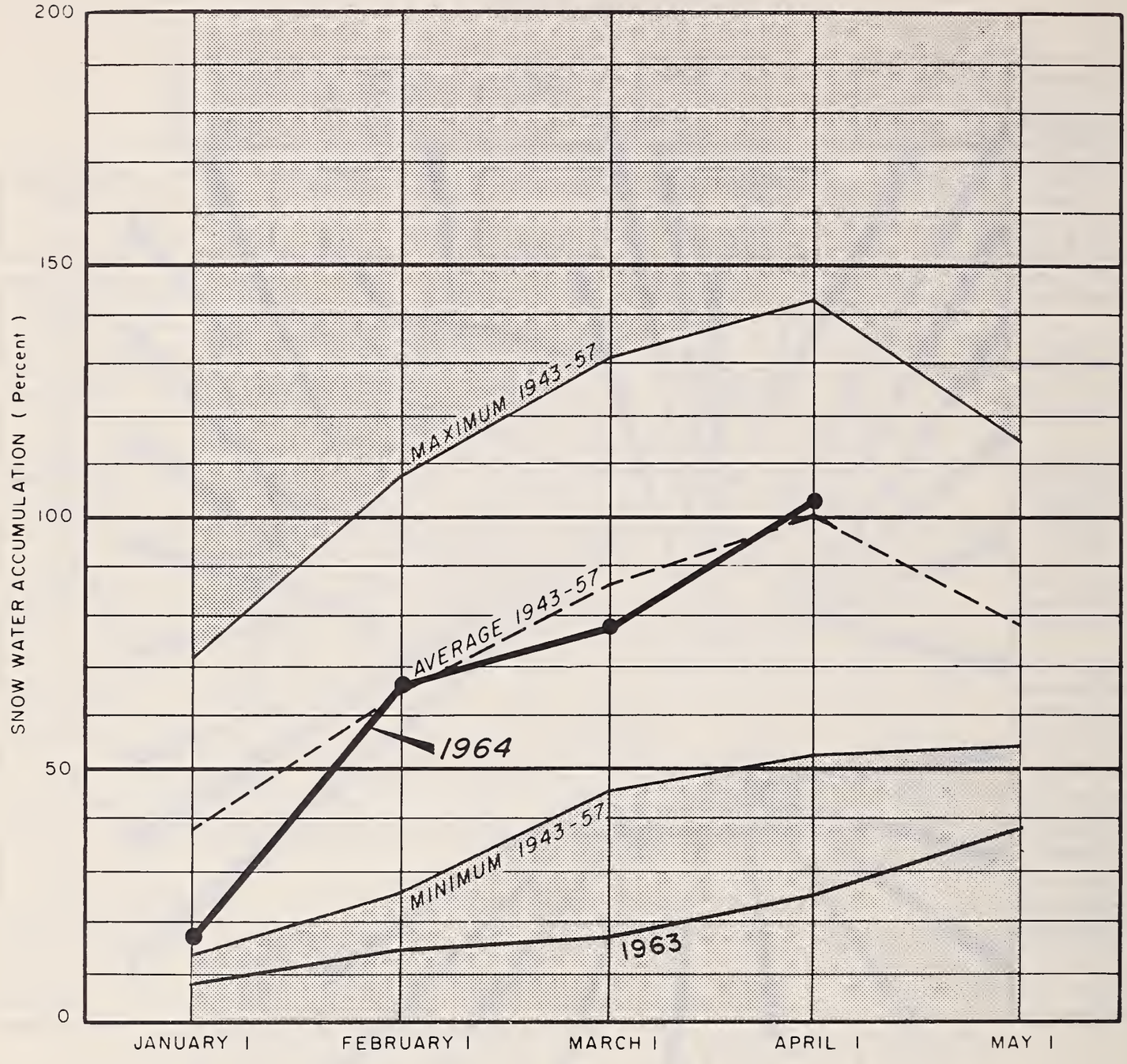
(a) Multiple purpose reservoir - space reserved primarily for flood runoff.

(b) Short record - compared with last year on this date.

N.R. - No report.

SNOW WATER ACCUMULATION in OREGON

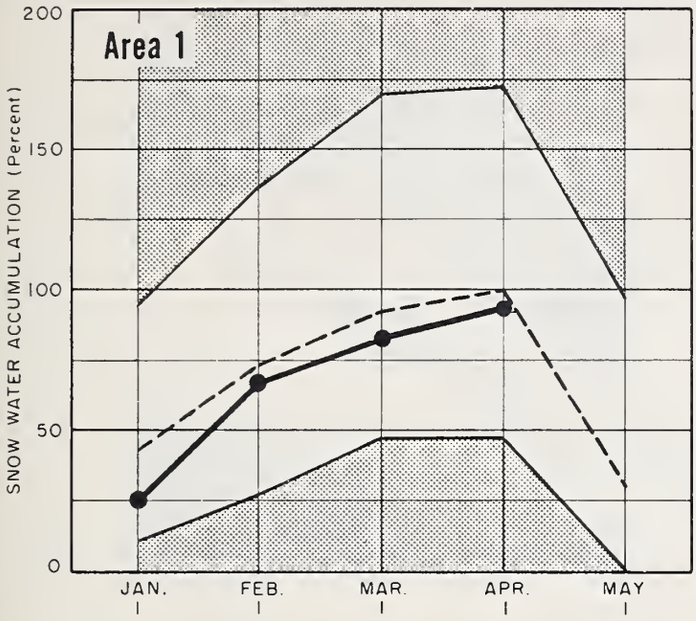
APRIL 1, 1964

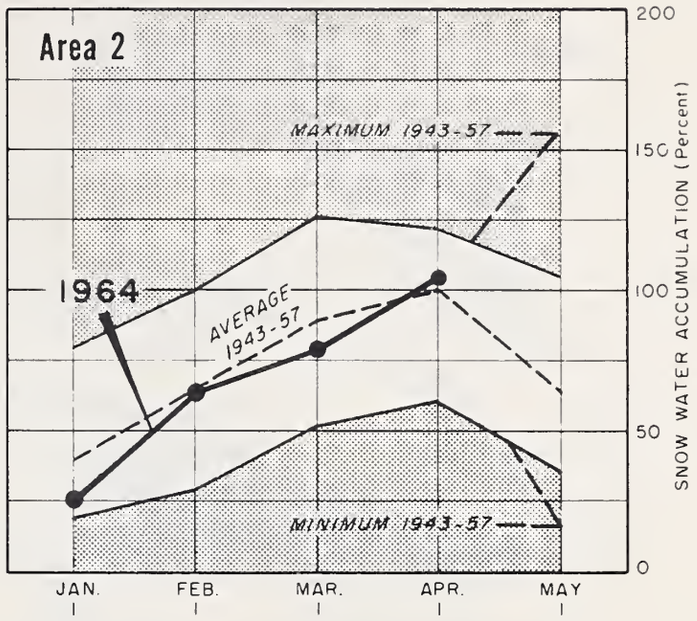


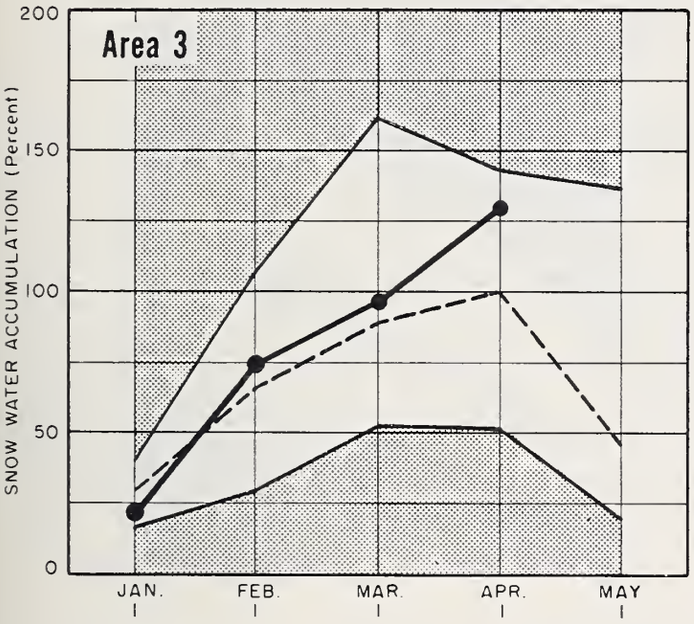
SNOW WATER ACCUMULATION in OREGON

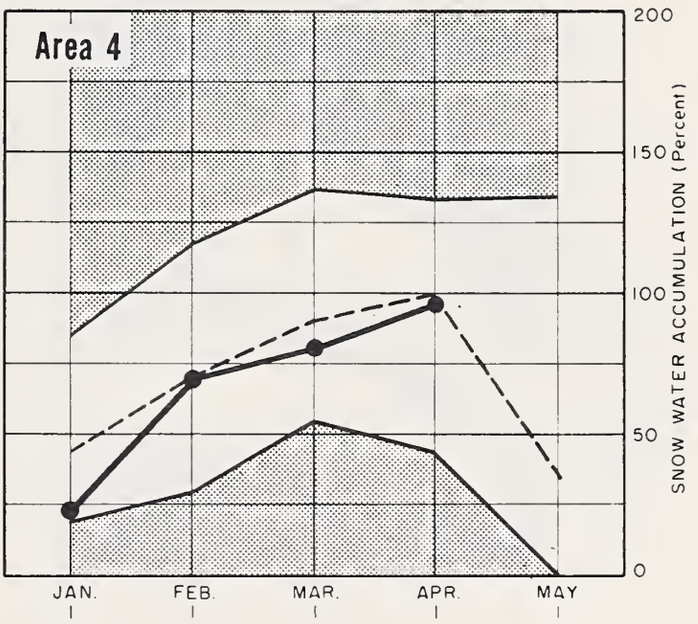
(Percent of average maximum accumulation)

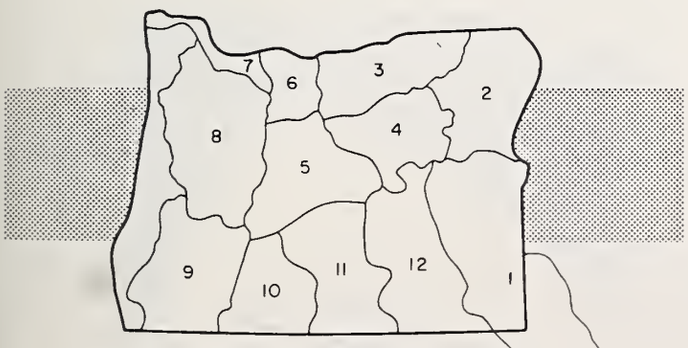
APRIL 1, 1964





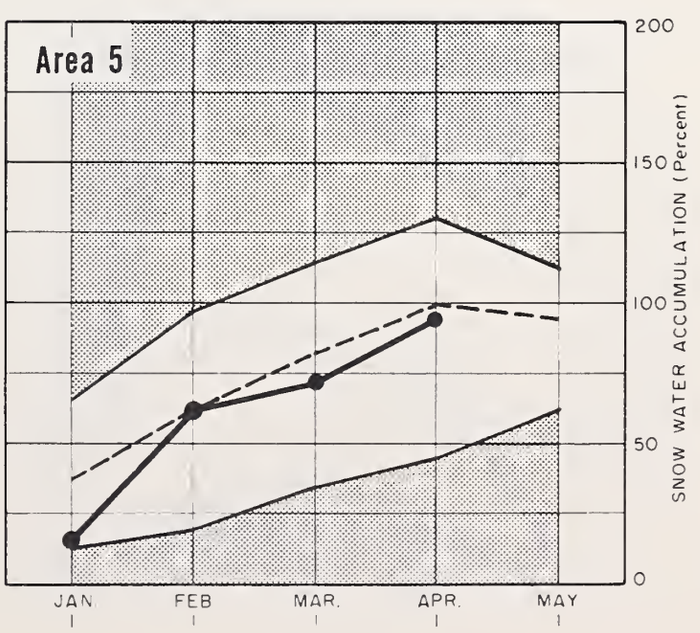






WATERSHED AREA LOCATIONS

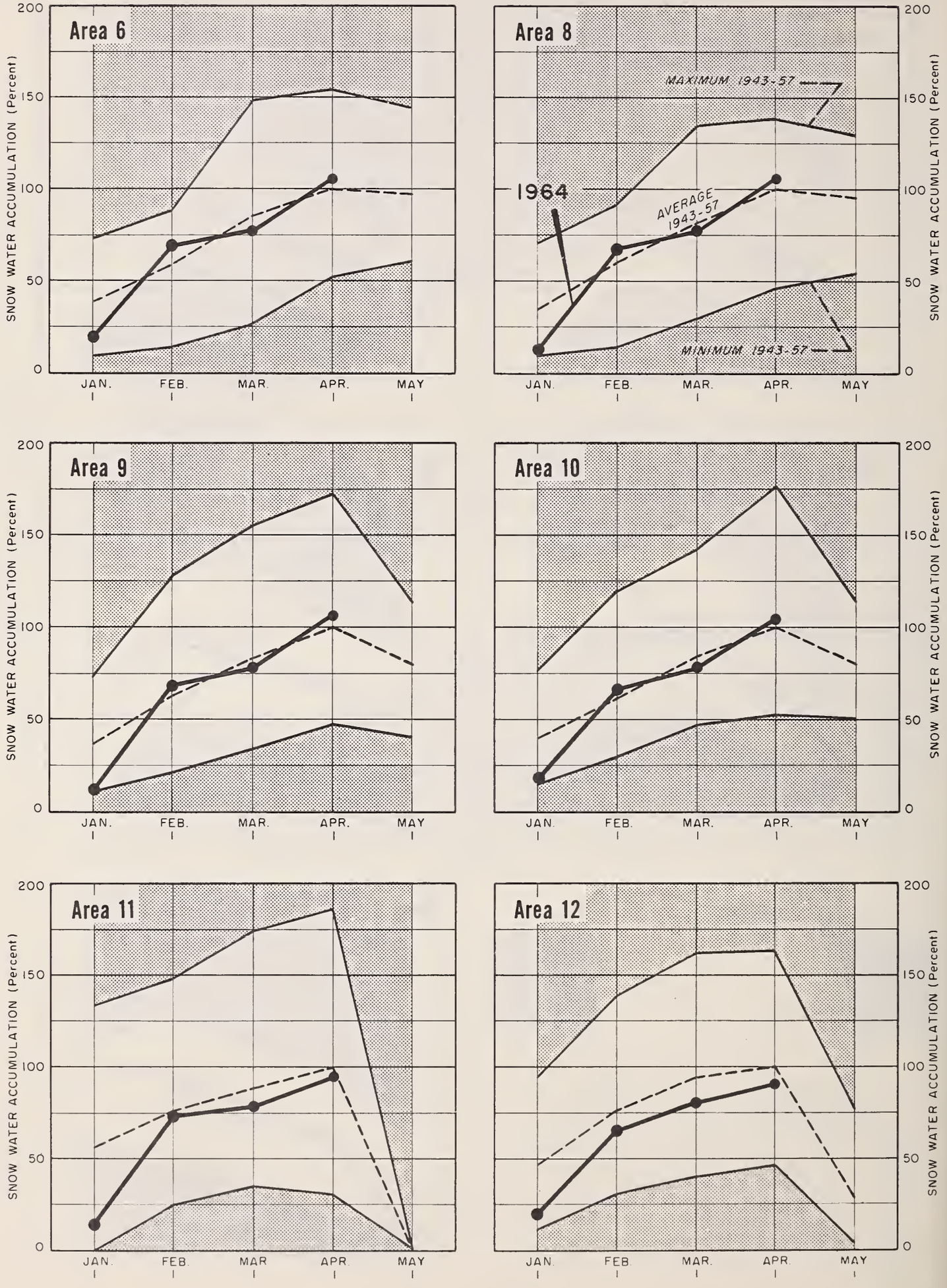
AREA 1 - OWYHEE, MALHEUR WATERSHEDS
AREA 2 - BURNT, POWDER, PINE, GRANDE RONOE, IMNAHA WATERSHEDS
AREA 3 - UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS
AREA 4 - UPPER JOHN DAY WATERSHEDS
AREA 5 - UPPER DESCHUTES, CROOKED, WATERSHEDS
AREA 6 - HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS
AREA 7 - LOWER COLUMBIA WATERSHEDS
AREA 8 - WILLAMETTE WATERSHEDS
AREA 9 - ROGUE, UMPQUA WATERSHEDS
AREA 10 - KLAMATH WATERSHEDS
AREA 11 - LAKE COUNTY, GOOSE LAKE WATERSHEDS
AREA 12 - HARNEY BASIN WATERSHEDS



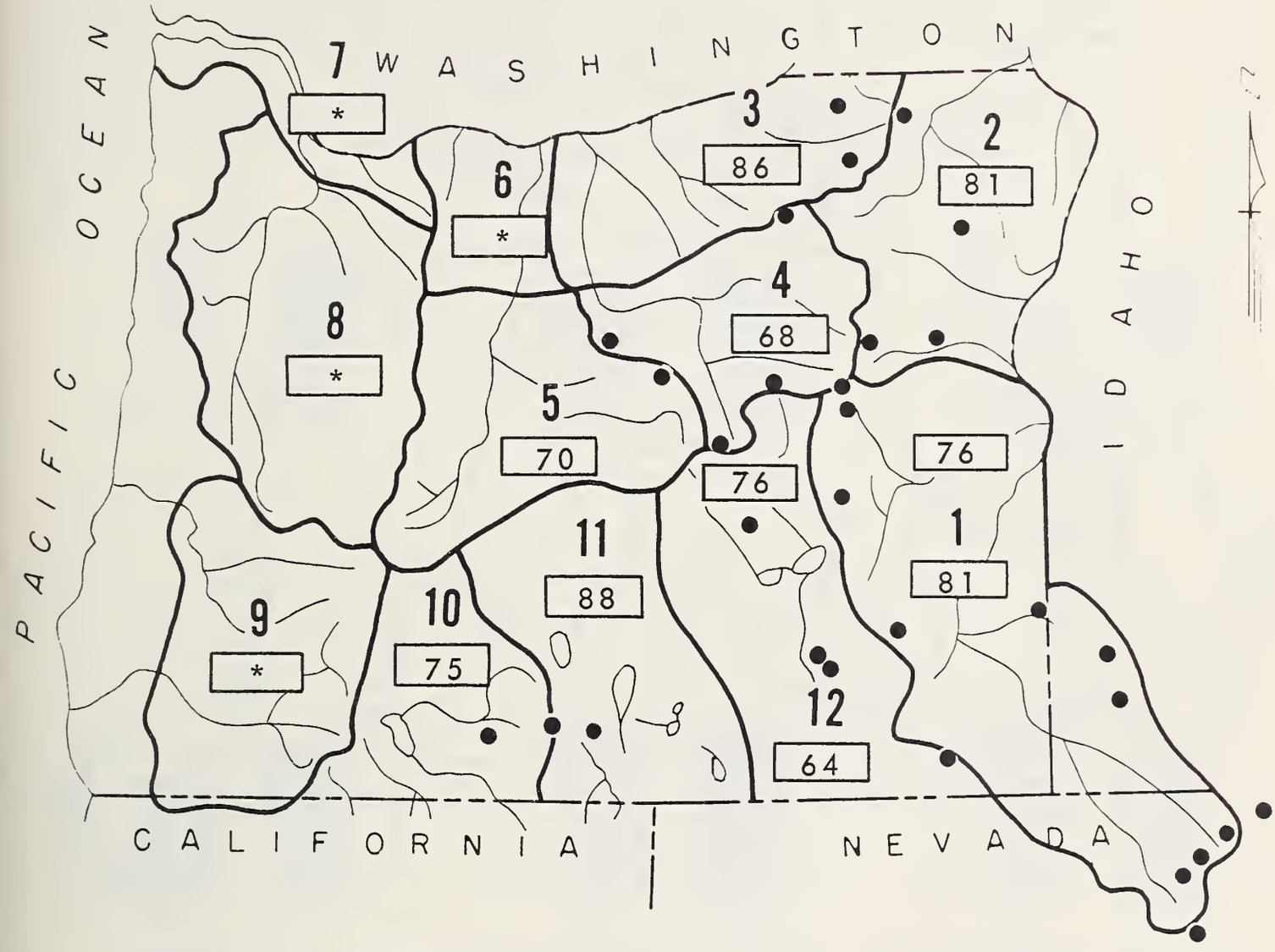
SNOW WATER ACCUMULATION in OREGON

(Percent of average maximum accumulation)

APRIL 1, 1964



MOUNTAIN SOIL MOISTURE in OREGON
as percent of capacity
APRIL 1, 1964



● Soil Moisture Station

*Moisture studies not yet developed in these areas.

VALLEY PRECIPITATION in OREGON [a]

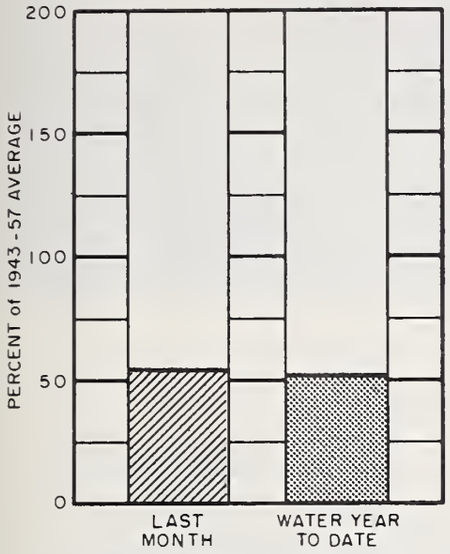
APRIL 1, 1964

PRECIPITATION as PERCENT of the 1943-57 AVERAGE					
STATION	LAST MONTH	WATER YEAR TO DATE [b]	STATION	LAST MONTH	WATER YEAR TO DATE [b]
Baker Apt.	114	100	Lakeview	57	99
Bend	124	68	Medford Apt.	159	101
Burns	93	86	Nyssa	78	100
Enterprise	52	64	Pendleton Apt.	61	70
Eugene Apt	100	99	Portland Apt.	56	82
Heppner	61	75	Roseburg Apt.	104	93
John Day	50	78	Salem Apt.	75	85
Klamath Falls Apt.	44	81	The Dalles	41	69

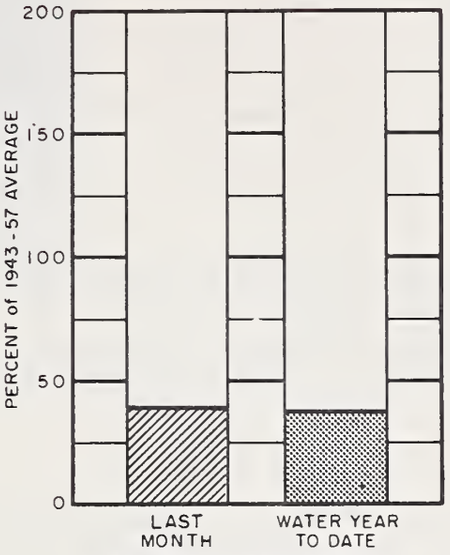
(a) Preliminary data furnished by the U.S. Weather Bureau. (b) Oct. 1 to date. (c) Report delayed.

CURRENT OREGON STREAMFLOW

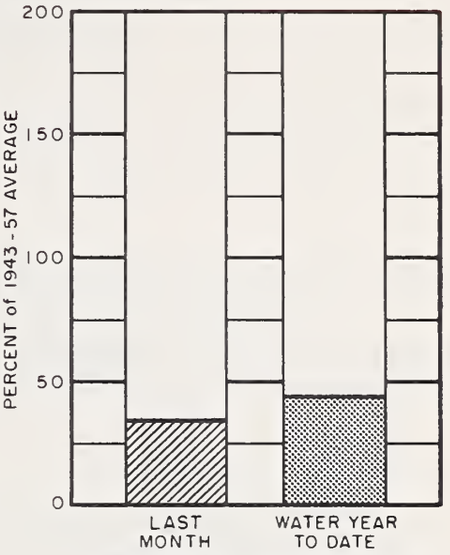
APRIL 1, 1964



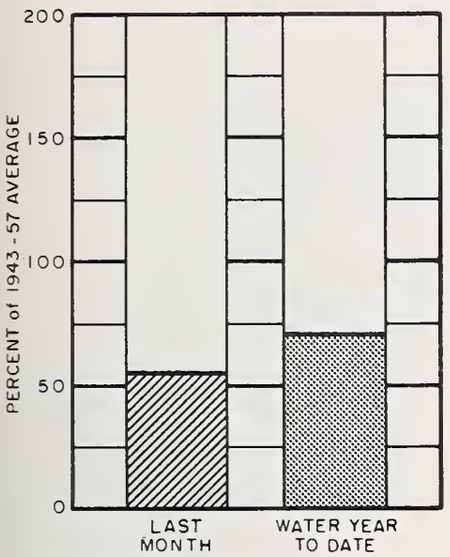
Owyhee Lake net inflow



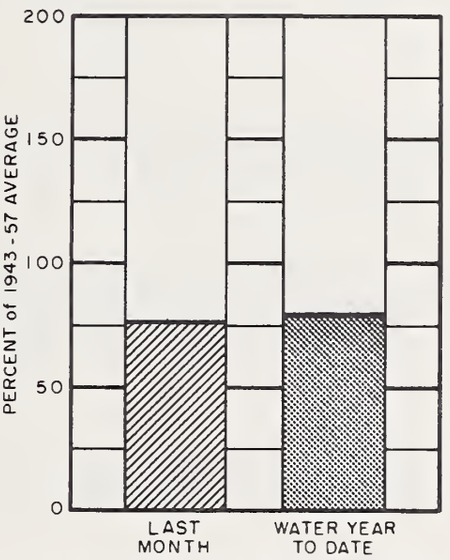
Umatilla near Umatilla



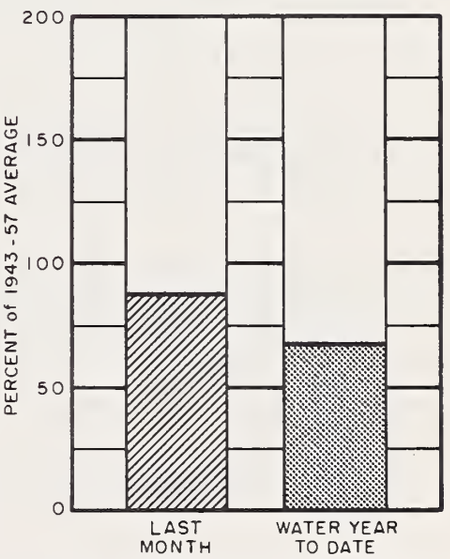
John Day at Service Creek



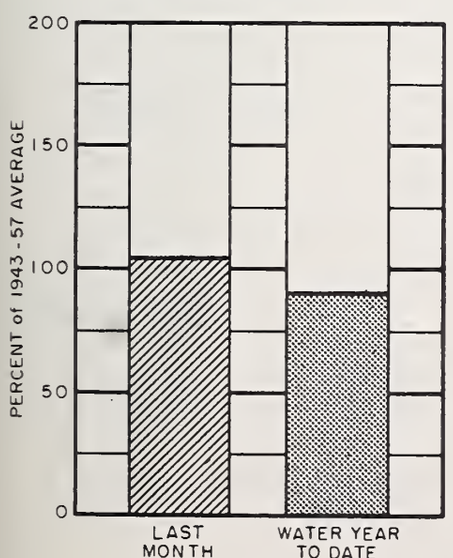
Deschutes at Moody



Hood and conduit near Hood River

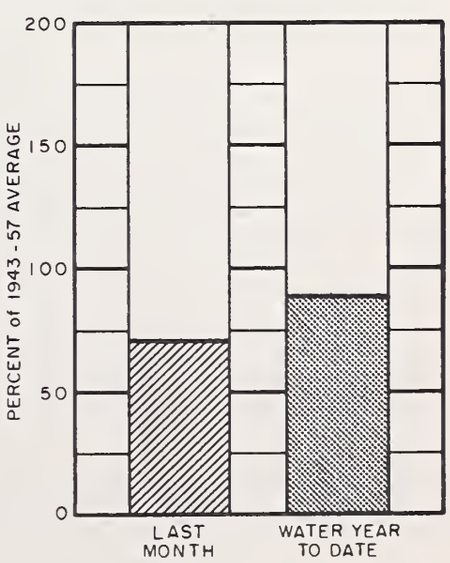


Mid. Fk. Willamette below No. Fk.



Umpqua near Elkton

Rogue at Raygold



Upper Klamath Lake net inflow

Data furnished by U.S. Geological Survey; The Pacific Power and Light Co., and North and South Boards of Control Owyhee Project.

WATER SUPPLY OUTLOOK
OWYHEE, MALHEUR WATERSHEDS
OREGON

as of

APRIL 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 irrigation season is opening in Malheur County with an adequate water supply outlook for all usual agricultural operations. The long-delayed spring break-up began in late March releasing streams that had been ice-bound all winter. Reservoired water supplies are still below average but not so far below last year but what expected streamflow will make up the shortages.

SNOW COVER

Water content of the mountain snowpack is 102 percent of the April 1 average on the Owyhee watersheds and 103 percent average on the Malheur. Compared with last year there is 4 times as much snow on the Owyhee this year and 10 times as much on the Malheur.

Most of the 6" to 24" of snow, reported from aerial operations in late January, on the many hundreds of square miles of the Owyhee plateau region were still present on April 1 and are now contributing heavily to present runoff into the Owyhee River. A rapid melt of this snow will cause a very heavy runoff.

SOIL MOISTURE

Moisture in the soils under the snowpack is quite satisfactory and now stands at 81 percent of capacity on the Owyhee and 76 percent on the Malheur.

RESERVOIR STORAGE

Storage in Lake Owyhee Reservoir on April 1 was 362,890 acre feet which is exactly the figure for that date a year ago. Although this figure is considerably less than average for this date, the reservoir is already receiving the early portion of what promises to be an excellent runoff this season.

Antelope Reservoir held 10,076 acre feet on April 1 and Jordan Valley Irrigation District needs about 35,000 a.f. for a good season. There may be some shortages.

As of April 1, Warmsprings and Agency Valley Reservoirs held 71,500 and 31,685 acre feet respectively, compared with 83,800 and 42,400 acre feet respectively just one year ago. These amounts are well below the average but will be sufficient when coupled with runoff still expected.

STREAMFLOW

Forecast for inflow to Lake Owyhee April through July is 385,000 a.f. or 93 percent of average. This flow could be substantially greater if a rapid snow-melt should occur.

Flow of the Malheur River near Drewsey is forecast at 69,000 acre feet or 86 percent average for April through July. For the same period the Malheur North Fork is forecast at 55,000 acre feet or 93 percent average.

Report prepared by
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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Boulder Creek	Average	Average
Bully Creek	Average	Average
Cow Creek	Average	Average
Jordan Creek	Average	Average
Jordan Valley Irrig. Dist.	Average	Fair-Poor
McDermitt Creek	Average	Average
Oregon Canyon Creek	Average	Average
Owyhee Project	Average	Average
Succor Creek	Average	Average
Tenmile Creek	Average	Average
Vale Oregon Irrig. Dist.	Average	Average
Warmsprings Irrig. Dist.	Average	Average
Willow Creek (Reservoired)	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Agency Valley	60.0	31.7	42.4	45.4
Antelope	55.0	10.1	15.4	18.3
Bully Creek	31.0	11.8	b	- -
Owyhee	715.0	362.9	362.8	539.0
Warmsprings	191.0	71.5	83.8	110.7

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of April 1, 1964

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
2140	Malheur near Drewsey	70	April-Sept.	81	86
		69	April-July	80	86
2175	Malheur, North Fork at Beulah[d]	60	April-Sept.	64	94
		55	April-July	59	93
1825	Owyhee Reservoir net Inflow[k]	400	April-Sept.	430	93
		385	April-July	412	93

SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Bear Creek (Nev.)	7800	72	16.9	2-27-64	9.9[f]	11.3	11.5
Big Bend (Nev.)	6700	48	16.7	3-30-64	15.7	15.5	14.6
Blue Mountain Springs	5900	42	16.9	3-27-64	7.9	13.5	9.7
Crane Prairie	5375	48	18.2	3-27-64	14.9	16.3	14.0
Folly Farm	4450	30	12.5	3-8-64	8.3	9.8	10.0[f]
Jack Creek, Lower (Nev.)	6800	48	8.7	3-27-64	8.2	8.1	8.5
Jordan Valley	4250	48	19.3	3-8-64	14.5	16.8	14.8[f]
Mud Flat (Ida.)	5500	48	12.8	3-25-64	9.5	11.0[f]	9.5
Stinking Water Summit	4800	48	21.9	3-25-64	20.8	21.9	20.6[f]
Taylor Canyon (Nev.)	6200	48	15.1	1-27-64	12.6[f]	12.4	14.9
Triangle (Ida.)	5150	48	16.2	3-25-64	13.5	15.2	13.9[f]

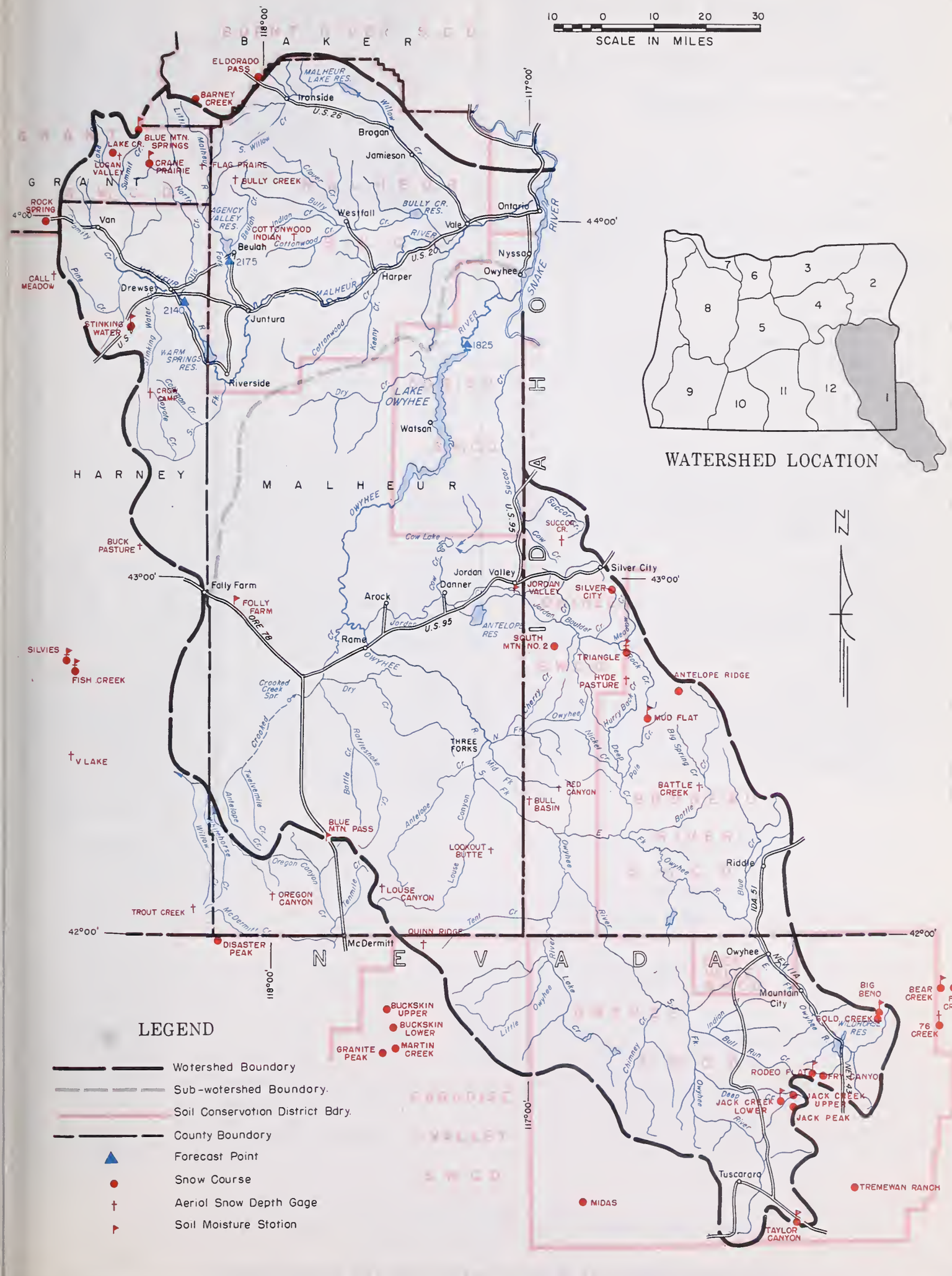
SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) 1943-57 AVERAGE
Antelope Ridge (Ida.)	5900	3/25	35	10.9	T	- -
Barney Creek	5950	3/30	29	8.8	1.6	8.6[h]
Battle Creek[e] (Ida.)	5700	3/26	27	8.1	0.0	- -
Bear Creek (Nev.)	7800	3/28	58[j]	19.8[j]	12.9	21.5[h]
Big Bend (Nev.)	6700	3/30	32	10.4	T	10.5
Blue Mountain Springs	5900	3/27	47	14.5	7.4	17.3

Continued

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (l) Ground measurement

OWYHEE, MALHEUR WATERSHEDS



OR-1c

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Buck Pasture[e]	5700	3/26	24	9.6	0.2	---[h]
Buckskin, Lower (Nev.)	6700	3/26	35	10.6	0.0	8.5[h]
Buckskin, Upper (Nev.)	7200	3/26	36	10.4	2.4	9.2[h]
Bull Basin[e] (Ida.)	5600	3/26	6	1.8	0.0	- -
Bully Creek[e]	5300	3/26	10	3.3	0.0	- -
Call Meadow[e]	5340	3/26	18	5.9	0.0	- -
Columbia Basin (Nev.)	6650	[b]				
Cottonwood-Indian[e]	4320	3/26	4	1.3	0.0	- -
Crane Prairie	5375	3/27	38	12.5	0.0	9.8
Crow Camp[e]	5500	3/26	12	4.0	0.2	- -
Disaster Peak (Nev.)	6500	3/30	35	11.7	T	11.5[h]
Eldorado Pass	4600	3/27	14	5.1	0.0	- -
Fish Creek	7900	3/30	68	28.0	16.2	28.0[h]
Flag Prairie[e]	4750	3/26	24	7.9	0.0	- -
Fox Creek (Nev.)	6800	3/28	37[j]	12.6[j]	1.4	9.1[h]
Fry Canyon (Nev.)	6700	3/30	23	6.9	0.0	9.2
Gold Creek (Nev.)	6600	3/30	26	8.5	0.0	6.0
Granite Peak (Nev.)	7800	3/27	32	9.7	10.4	11.2[h]
Hyde Pasture (Ida.)	5800	3/25	29	8.4	T	- -
Jack Creek, Lower (Nev.)	6800	3/27	20	5.8	T	2.5
Jack Creek, Upper (Nev.)	7250	3/27	32	10.7	3.4	10.9
Jacks Peak (Nev.)	8420	3/27	74	24.8	14.7	25.4[h]
Lake Creek	5120	3/27	36	12.5	0.0	11.2
Logan Valley[e]	5100	3/26	28	9.2	0.0	- -
Lookout Butte[e]	5650	3/26	0	0.0	0.0	- -
Louse Canyon[e]	6440	3/26	11	3.3	0.2	- -
Martin Creek (Nev.)	6700	3/26	37	10.2	0.0	8.5[h]
Midas (Nev.)	7200	3/31	2	0.6	0.0	1.9[h]
Mud Flat (Ida.)	5500	3/25	33	9.2	0.2	- -
Oregon Canyon[e]	6950	3/26	15	4.5	0.2	- -
Quinn Ridge[e] (Nev.)	6300	3/26	7	2.1	0.0	- -
Red Canyon[e] (Ida.)	6500	3/26	29	8.7	0.2	- -
Rock Spring	5100	3/30	18	5.8	T	4.9
Rodeo Flat (Nev.)	6800	3/30	20	6.2	T	8.7
76 Creek (Nev.)	7100	3/31	33	11.4	3.9	15.7[h]
Silver City (Ida.)	6400	3/28	52	17.7	0.8	17.5[h]
Silvies	6900	3/30	39	15.3	3.0	13.9[h]
South Mountain #2 (Ida.)	6340	4/2	40	13.0	0.3	12.1[h]
Stag Mountain	7700	[b]				
Stinking Water	4800	3/31	T	T	0.0	0.7[h]
Succor Creek[e] (Ida.)	6100	3/26	32	9.6	T	- -
Taylor Canyon (Nev.)	6200	3/27	23	6.7	0.0	3.5
Toe Jam (Nev.)	7700	[b]				
Tremewan Ranch (Nev.)	5700	[b]				
Triangle (Ida.)	5150	3/25	7	1.8	T	- -
Trout Creek[e]	7800	3/26	24	7.2	6.0	- -
"Y" Lake[e]	6600	3/26	18	7.2	0.0	- -

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS
OREGON

as of

APRIL 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 irrigation season opens in Baker, Union and Wallowa counties with a satisfactory water supply outlook. The spring break-up has been delayed until the last week of March resulting in very limited water flowing into reservoirs, Expected runoff should be adequate for this season's agricultural operations.

SNOW COVER

Water content of the mountain snowpack on the Burnt River is 107 percent of the 15 year (1943-57) April 1 average and nearly 9 times as great as one year ago. Snow on the Powder River is 99 percent average and on the Grande Ronde 101 percent. On both of these watersheds the snow is double that of last year on this date.

SOIL MOISTURE

This good snowpack lies on watershed soils that are now re-charged up to 81 percent of capacity in the top four feet. These soils are slightly drier than one year ago but will soak up relatively small amounts of snow-melt runoff.

RESERVOIR STORAGE

With the spring break-up just beginning, the flow of water into reservoirs has been greatly limited. However, current storage in Wallowa Lake is 22,704 acre feet compared with the April 1 average of 16,100 and in Unity is 13,682 acre feet which is right on the average figure. These stored water supplies, coupled with runoff yet to come, will be adequate.

STREAMFLOW

Forecasts of streamflow all range between 84 and 103 percent average for the next six months ending with September 30.

Flow of the Grande Ronde at La Grande is forecast at 190,000 acre feet or 94 percent average for April through September. Catherine Creek, a southern tributary, is forecast at 74,000 acre feet or 101 percent average for the same period.

Wallowa River and tributaries, all a part of the Grande Ronde, are forecast at 84 percent for Bear Creek, 86 percent for Lostine River, 85 percent for Hurricane Creek and 90 percent for the East Fork of the Wallowa.

Powder River is forecast at 68,000 acre feet or 103 percent average for the next six months. Practically all of this will flow in the first 4 months.

Burnt River is forecast to flow 45,000 acre feet at the station near Hereford. This would be 100 percent average.

Flow of small streams heading in medium or low elevations will be very close to "normal" this year.

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WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Alder Slope	Average	Average
Baker Valley	Average	Average
Big Creek	Average	Average
Clover Cr. (nr. No. Powder)	Average	Average
Cove	Average	Average
Durkee	Average	Average
Eagle Valley	Average	Average
Elgin	Average	Average
Enterprise-Joseph	Average	Average
Hereford-Bridgeport	Average	Average
Imnaha River	Average	Average
La Grande-Island City	Average	Average
Lostine-Wallowa	Average	Average
No. Powder River-Wolf Cr.	Average	Average
Pine Valley	Average	Average
Powder River-Elk Creek	Average	Average
Summerville	Average	Average
Sumpter Valley	Average	Average
Union-Hot Lake	Average	Average
Unity	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Unity	25.2	13.7	24.7	13.6
Wallowa Lake	37.5	22.7	26.4	16.1

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of April 1, 1964

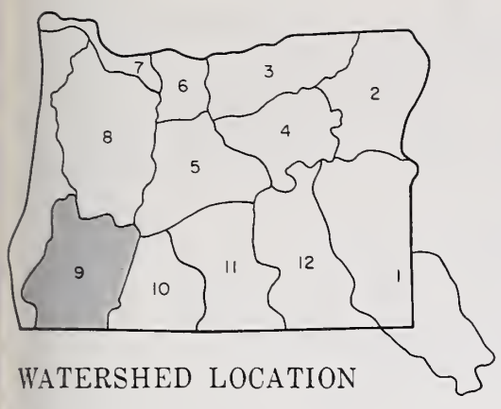
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
3305	Bear near Wallowa	62	April-Sept.	74	84
2730	Burnt near Hereford[d]	42	April-June	41	102
		45	April-Sept.	45	100
3200	Catherine near Union	74	April-Sept.	73	101
3190	Grande Ronde at La Grande	190	April-Sept.	202	94
3295	Hurricane near Joseph	42	April-Sept.	49	85
2920	Imnaha at Imnaha	270	April-Sept.	314	86
3300	Lostine near Lostine	115	April-Sept.	133	86
2755	Powder near Baker	66	April-July	65	102
		68	April-Sept.	66	103
3250	Wallowa, East Fork near Joseph[d]	8.7	April-July	9.7	90
		10.9	April-Sept.	12.1	90

SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Blue Mountain Summit	5100	36	16.8	3-27-64	9.7	13.4	7.4
Emigrant Springs	3925	48	22.3	3-24-64	21.8	20.7	21.4
Tollgate	5070	48	23.6	3-27-64	19.0	21.3	20.6

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

ROGUE, UMPQUA WATERSHEDS



WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Aneroid Lake #1	7480	3/29	91	31.4	27.0	39.4
Aneroid Lake #2	7000	3/29	74	27.0	21.1	30.4
Anthony Lake	7125	3/24	86	28.8	16.3	30.5
Bald Mountain[e] (Ore.)	6700	3/31	86	30.1	16.6	- -
Barney Creek	5950	3/30	29	8.8	1.6	8.6[h]
Beaver Reservoir	5340	3/27	42	13.5	7.3	13.0
Big Sheep[e]	6200	3/28	63	22.0	7.7	- -
Blue Mountain Summit	5098	3/27	38	10.5	1.5	8.6
Bourne	5800	3/26	55	17.7	5.2	16.6
County Line	4800	3/31	23	8.1	0.0	8.6[h]
Dooley Mountain	5430	3/23	32	9.5	0.1	9.2
Eilertson Meadows	5400	3/24	48	14.4	0.8	12.2
Eldorado Pass	4600	3/27	14	5.1	0.0	- -
Gold Center	5340	3/31	36	12.9	1.5	13.3
Goodrich Lake[e]	6775	3/27	114	36.5	26.9	38.2[h]
Little Alps	6200	3/24	54	15.5	5.6	- -
Lucky Strike	5050	3/25	47	14.1	7.8	14.3[h]
Meacham	4300	3/24	47	16.9	0.0	10.4
Mirror Lake[e]	8200	3/28	204	71.4	45.1	- -
Moss Spring	5850	3/25	82	27.2	8.7	26.2
Schneider Meadows	5400	3/27	92	31.8	16.3	31.2
Schoolmarm	4775	3/31	22	7.6	0.0	6.4[h]
Standley[e]	7400	3/28	106	37.1	17.6	- -
Taylor Green	5740	3/23	52	16.1	6.5	18.0
Tipton	5100	3/30	35	12.5	2.0	11.0[h]
Tollgate	5070	3/27	105	39.0	9.6	30.5
TV Ridge[e]	5670	Snow blown away			0.0	- -

"The Conservation of Water begins with the Snow Survey"

Area 3

WATER SUPPLY OUTLOOK
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS
OREGON

as of
APRIL 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 irrigation season is opening in Umatilla, Morrow and Gilliam counties with an adequate water supply outlook for all agricultural operations, except for possible shortages to lands served from McKay Reservoir.

SNOW COVER

Water content of the mountain snowpack on April 1 was 129 percent average and about 7 times greater than a year ago on this date. Percentage-wise only Lake County has a better snowpack with 158 percent of average.

SOIL MOISTURE

This good snowpack lies on watershed soils which have been re-charged with moisture up to 86 percent of capacity -- a factor which will favor the early snow-melt runoff.

RESERVOIR STORAGE

Cold Springs Reservoir is full (50,000 acre feet plus), but McKay Reservoir on April 1 contained only 22,120 acre feet compared with 39,700 last year and an average April 1 storage of 56,800 a.f. An early and rapid snowmelt would be favorable to the McKay Reservoir storage. However, lacking this, the reservoir will be some 10,000 a.f. short of serving its usual water users if the present forecasts are correct.

STREAMFLOW

Flow of McKay Creek into the reservoir is forecast at 33,000 acre feet or 106 percent average for the April through July period. Inflow last year during this 4 month period was 28,200 a.f.

Flow of Butter Creek is expected to be about 14,500 acre feet or 104 percent average April through July.

The Umatilla River at Pendleton is forecast at 185,000 acre feet or 102 percent for the 4 months April through July. The flow last year in this period was roughly 105,000 acre feet.

Flow of the South Fork of the Walla Walla River is forecast at 66,000 acre feet April through July and 80,000 April through September. These flows will be 106 and 105 percent respectively. Last year the flows for the 4 month and 6 month periods were 37,300 and 48,800 a.f. respectively.

Flows of Couse, Dry and Pine creeks and other small streams in the Milton-Freewater area are expected to be above average in amount and longer in duration.

Report prepared by
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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Birch Creek	Average	Average
Butter Creek	Average	Average
Dry Creek	Average	Average
Dugger Creek	Average	Average
Johnson Creek	Average	Average
McKay Creek	Average	Average
Mill Creek	Average	Average
Mud Creek	Average	Average
Pine Creek	Average	Average
Rhea Creek	Average	Average
Rock Creek	Average	Average
Umatilla River (Cold Springs Reservoir)	Average	Average
Umatilla River, Main	Average	Average
Umatilla River (McKay Res.)	Average	Fair-Poor
Walla Walla River, Little	Average	Average
Walla Walla River, Main	Average	Average
Walla Walla River, No. Fork	Average	Average
Walla Walla River, So. Fork	Average	Average
Willow Creek	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cold Springs	50.0	50.0	50.0	47.5
McKay	73.8	22.1	39.7	56.8

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of April 1, 1964

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
0320	Butter Creek near Pine City	14.5	April-July	9.7	104
0225	McKay near Pilot Rock	33	April-July	31	106
0200	Umatilla near Gibbon	98	April-Sept.	96	102
0210	Umatilla at Pendleton	185	April-July	182	102
		190	April-Sept.	187	102
0100	Walla Walla, South Fork near Milton	66	April-July	62	106
		80	April-Sept.	76	105

SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Athena-Weston	1700	48	18.7	3-27-64	13.8	14.9	16.9
Battle Mountain Summit	4340	48	13.8	3-25-64	13.1	13.4	11.7[f]
Emigrant Springs	3925	48	22.3	3-24-64	21.8	20.7	21.4
Tollgate	5070	48	23.6	3-27-64	19.0	21.3	20.6

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
					LAST YEAR	1943-57 AVERAGE
Arbuckle Mountain	5400	4/2	39	13.7	0.0	12.1
Battle Mountain Summit	4340	3/25	16	4.0	0.0	- -
Blue Mountain Camp	4300	3/27	74	27.8	0.0	- -
Emigrant Springs	3925	3/24	34	11.8	0.0	6.5
Lucky Strike	5050	3/25	47	14.1	7.8	14.3[h]
Meacham	4300	3/24	47	16.9	0.0	10.4
Tollgate	5070	3/27	105	39.0	9.6	30.5
Weston Mountain	2700	3/27	0	0.0	0.0	- -

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

LEGEND

- Watershed Baundary
- Sub-watershed Baundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Caurse
- Soil Maisture Station

WATERSHED LOCATION

Area 4

WATER SUPPLY OUTLOOK
UPPER JOHN DAY WATERSHEDS
OREGON

as of
APRIL 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 irrigation season has opened in the John Day country with an adequate water supply outlook for all usual agricultural purposes. Upper watershed soils are still only partially re-charged by fall rains.

SNOW COVER

Water content of the mountain snowpack as of April 1 is 99 percent of the April 1 average and is over 3 times as great as a year ago at this time. This snow is well consolidated and ready to run off as soon as good snow-melt weather begins.

SOIL MOISTURE

Moisture in the soil mantle under the snowpack is about 68 percent of capacity. These soils will absorb some of the runoff water and reduce streamflow a limited amount.

STREAMFLOW

Preliminary data from the U. S. Geological Survey in Portland indicates the flow of the John Day River at Service Creek has been about 37 to 33 percent of average in the past two months. These are not record-low flows for these months but they force one to wonder whether they have been caused by recent sub-normal temperatures and low precipitation or by a series of relatively dry years. More to the point is the question, "Will these low flows be reflected in the spring and summer runoff just now beginning"?

Flow of the John Day River at Prairie City is forecast at 47,000 acre feet or 95 percent of average for the April-July period. The Middle Fork, as measured at Ritter, is forecast at 126,000 acre feet or 96 percent average for the same 4 month period.

Other streams, such as Strawberry, Indian, Pine, Mountain, Rock, Beech, Fox, Long, Camas and Cherry creeks will have near average flows and should support the usual irrigation requirements.

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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Beech Creek	Average	Average
Beech Creek-Fox-Long Cr.	Average	Average
Bridge-Mountain Creeks	Average	Average
Camas Creek	Average	Average
Cherry Creek	Average	Average
Indian-Pine Creeks	Average	Average
John Day River, Main Fork	Average	Average
John Day River, Mid. Fork	Average	Average
John Day River, N. Fork	Average	Average
John Day River, S. Fork	Average	Average
Monument-Kimberly	Average	Average
Strawberry Creek	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of April 1, 1964

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
0385	John Day at Prairie City	47	April-July	49	96
		51	April-Sept.	54	95
0440	John Day, Middle Fork at Ritter	126	April-July	131	96
		130	April-Sept.	135	96
0375	Strawberry near Prairie City	8.6	April-Sept.	9.1	95

SOIL MOISTURE

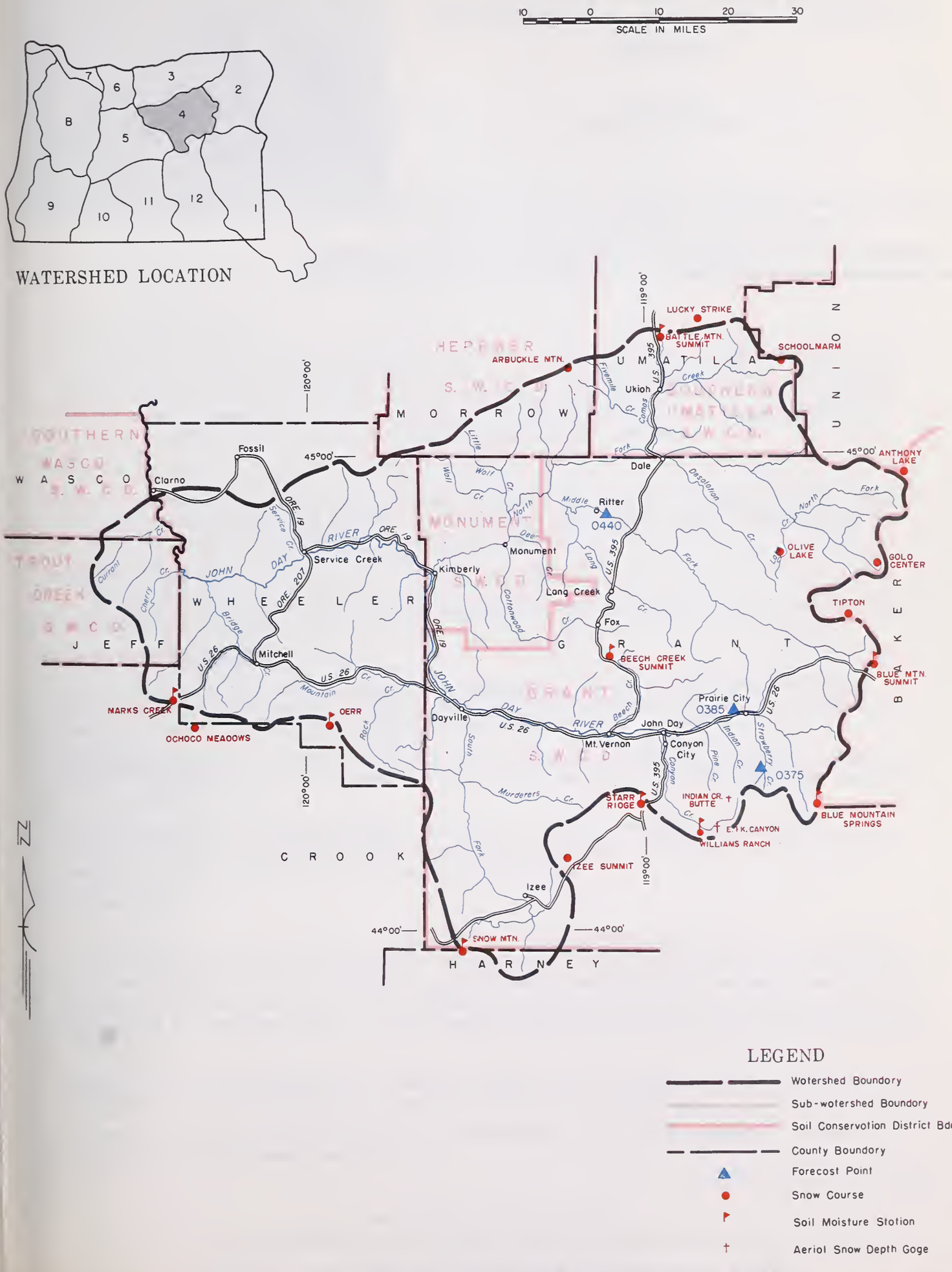
STATION NAME	STATION ELEVATION	PROFILE (Inches) DEPTH	PROFILE (Inches) CAPACITY	SOIL MOISTURE (Inches) DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Battle Mountain Summit	4340	48	13.8	3-27-64	13.1	13.4	11.7[f]
Blue Mountain Springs	5900	42	16.9	3-27-64	7.9	13.5	9.7
Blue Mountain Summit	5100	36	16.8	3-27-64	9.7	13.4	7.4
Derr	5670	24	9.0	b			
Marks Creek	4540	36	14.1	3-27-64	9.3	13.8	13.5
Snow Mountain	6300	48	16.7	3-31-64	12.4	14.9	15.1
Starr Ridge	5150	36	10.6	3-30-64	8.5	10.5	9.6

SNOW

SNOW COURSE NAME	SNOW COURSE ELEVATION	CURRENT INFORMATION DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	PAST RECORD WATER CONTENT (Inches) LAST YEAR	1943-57 AVERAGE
Anthony Lake	7125	3/24	86	28.8	16.3	30.5
Arbuckle Mountain	5400	4/2	39	13.7	0.0	12.1
Battle Mountain Summit	4340	3/25	16	4.0	0.0	- -
Beech Creek Summit	4800	3/30	14	4.8	0.0	5.3
Blue Mountain Springs	5900	3/27	47	14.5	7.4	17.3
Blue Mountain Summit	5098	3/27	38	10.5	1.5	8.6
Derr	5670	3/25	34	11.0	1.1	10.8
East Fork Canyon[e]	5700	3/27	36	11.5	0.0	- -
Gold Center	5340	3/31	36	12.9	1.5	13.3
Indian Creek Butte[e]	6550	3/27	72	23.0	18.7	- -
Izee Summit	5293	3/30	26	8.4	0.0	8.6[h]
Lucky Strike	5050	3/25	47	14.1	7.8	14.3[h]
Marks Creek	4540	3/27	18	6.5	0.0	2.5
Ochoco Meadows	5200	3/30	29	9.3	T	11.0
Olive Lake	6000	3/27	70	22.6	8.8	22.3[h]
Schoolmarm	4775	3/31	22	7.6	0.0	6.4[h]
Snow Mountain	6300	3/31	35	10.9	6.4	14.8[h]
Starr Ridge	5150	3/30	16	5.1	0.0	5.8[h]
Tipton	5100	3/30	35	12.5	2.0	11.0[h]
Williams Ranch	4500	b				

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

UPPER JOHN DAY WATERSHEDS



OR-4c

Area 5

WATER SUPPLY OUTLOOK
UPPER DESCHUTES, CROOKED WATERSHEDS
OREGON

as of
APRIL 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 irrigation season is opening with an adequate water supply outlook for agricultural operations in Jefferson, Crook and Deschutes counties. The spring break-up is just now beginning with snow-melt water beginning to swell streams in the area. Reservoired water supplies are about average and upper watershed soils under the snowpack are still only partially re-charged.

SNOW COVER

Water content of the mountain snowpack is now 96 percent average on the Crooked River watersheds and 102 percent on the Deschutes. This year's snow is from 4 to 6 times as great as available one year ago.

SOIL MOISTURE

Watershed soils are primed up to 70 percent of capacity and will soak up some of the snow-melt runoff.

RESERVOIR STORAGE

Crooked River reservoirs, Ochoco and Prineville, now hold 27,800 and 108,882 acre feet respectively compared with 41,700 and 106,900 a.f. last year. These are adequate supplies for 1964 irrigation operations.

Wickiup Reservoir, on the Deschutes River, now holds 187,320 acre feet compared with 199,900 acre feet last year. This is well above the April 1 average storage of 141,300 acre feet.

Crane Prairie and Crescent Lake reservoirs now hold 41,600 and 51,928 acre feet compared with 47,700 and 65,300 acre feet a year ago. These are favorable amounts for the current year's irrigation operations.

STREAMFLOW

Preliminary data from the U. S. Geological Survey in Portland indicates the flow of the Deschutes River at Moody has been about 55 percent of the average for the past two months. These are the lowest February and March flows recorded for this stream at this station since 1906. Probably these low figures are at least partially explained by the 260,000 acre feet caught behind Round Butte Dam since January 2 this year.

Flow of the Deschutes River at Benham Falls, April through July, is forecast at 355,000 acre feet or 88 percent of the 1943-57 average flow.

Squaw and Tumalo creeks are forecast at 96 and 93 percent average, respectively, for the April-September period.

continued on next page

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continued from preceding page

Crooked River near Post is forecast to flow 93 percent or 118,000 acre feet April through July. Inflow to Ochoco Reservoir is forecast at 29,000 a.f. or 94 percent for the same period.

It is expected that adequate water supplies will be available for all usual irrigation this season.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Arnold Irrigation District	Average	Average
Bear Creek	Average	Average
Beaver Creek	Average	Average
Camp Creek	Average	Average
Central Ore. Irrig. Dist.	Average	Average
Crooked River	Average	Average
Deschutes River	Average	Average
Hay-Trout Creeks	Average	Average
Lone Pine Irrig. Dist.	Average	Average
Mill Creek	Average	Average
North Unit Irrig. Dist.	Average	Average
Ochoco Creek	Average	Average
Sisters Irrigation Dist.	Average	Average
Snow Creek Irrig. Dist.	Average	Average
Squaw Creek Irrig. Dist.	Average	Average
Swalley Ditch	Excellent	Excellent
Tumalo Project	Average	Average
Walker Basin Irrig. Dist.	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Crane Prairie	55.3	41.6	47.7	45.2
Crescent Lake	117.2	51.9	65.3	47.0
Ochoco	47.5	27.8	41.7	34.3
Prineville	153.0	108.9	106.9	- -
Wickiup	182.0	187.3	199.9	141.3

Note:

Current storage figure for Crescent Lake includes 5360 acre feet of known dead and inactive storage.

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of April 1, 1964

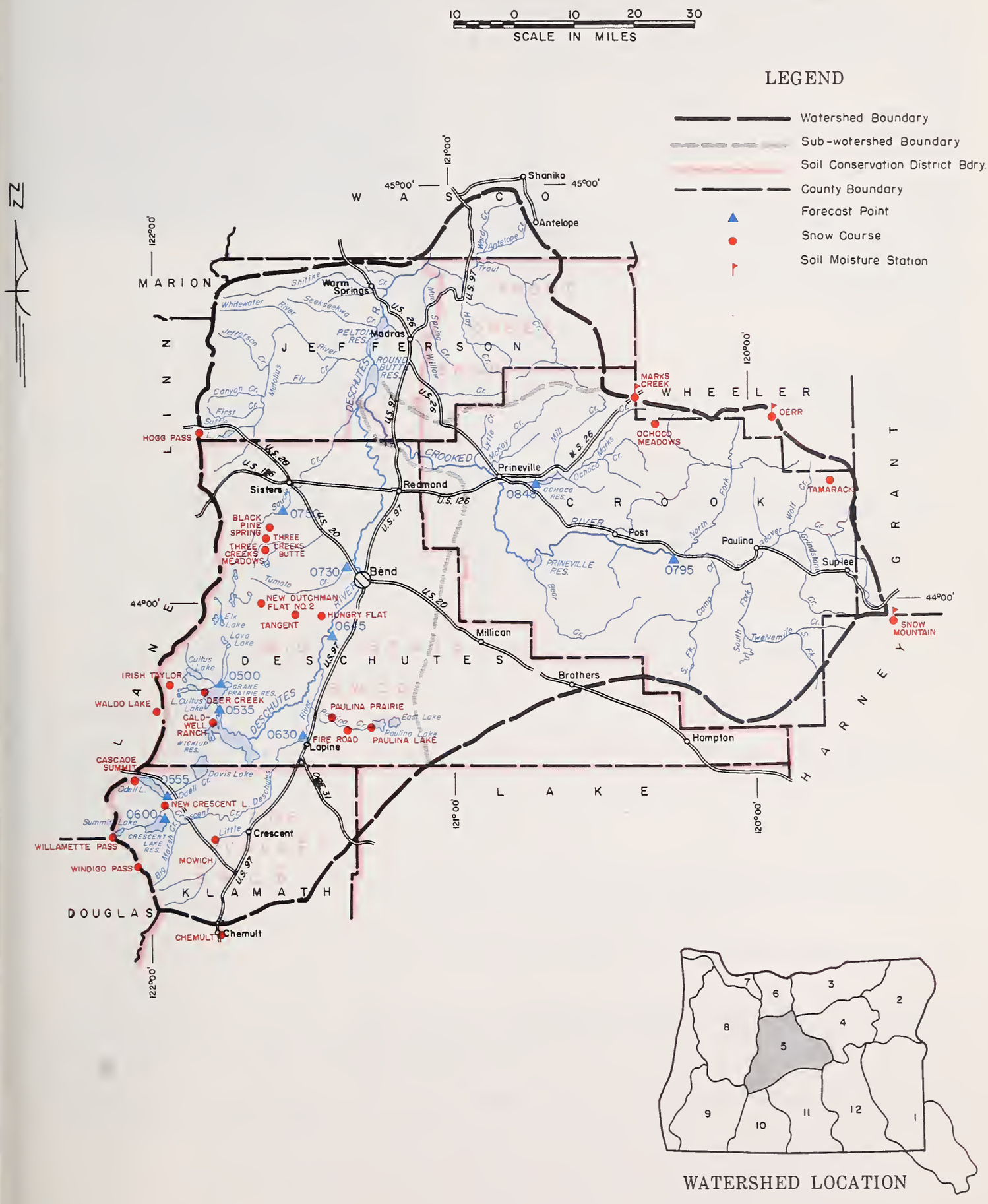
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
0535	Crane Prairie Reservoir total Inflow	135	April-Sept.	143	94
0600	Crescent at Crescent Lake [d]	23	April-July	25	93
		29	April-Sept.	31	93
0795	Crooked near Post	118	April-July	127	93
		120	April-Sept.	129	93
0645	Deschutes at Benham Falls [d]	355	April-July	404	88
		530	April-Sept.	602	88
0500	Deschutes below Snow Creek	70	April-Sept.	74	95
0630	Deschutes, Little near Lapine [d]	95	April-July	100	95
		106	April-Sept.	113	94
0848	Ochoco Reservoir net Inflow	29	April-July	31	94
		30	April-Sept.	32	94
0555	Odell near Crescent	31	April-Sept.	34	91
0750	Squaw near Sisters	53	April-Sept.	55	96
0730	Tumalo near Bend [d]	51	April-Sept.	55	93

SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Derr	5670	24	9.0	b			
Marks Creek	4540	36	14.1	3-27-64	9.3	13.8	13.5
Snow Mountain	6300	48	16.7	3-31-64	12.4	14.9	15.1

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

UPPER DESCHUTES, CROOKED WATERSHEDS



Upper Deschutes, Crooked Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Black Pine Spring	4600	3/31	11	5.2	0.0	5.9 h
Caldwell Ranch	4400	3/24	38	12.6	0.0	11.0
Cascade Summit	4880	3/30	93	37.4	8.8	36.7
Chemult	4760	3/27	33	10.6	0.2	10.4
Derr	5670	3/25	34	11.0	1.1	10.8
Fire Road	5050	3/23	24	7.8	0.0	- -
Hogg Pass	4755	3/30	125	49.1	11.5	50.6
Hungry Flat	4400	3/30	15	5.7	0.0	6.1 h
Irish-Taylor	5500	3/24	128	44.3	14.7	43.0 h
Marks Creek	4540	3/27	18	6.5	0.0	2.5
Mowich	4700	3/27	18	6.3	0.0	- -
New Crescent Lake	4800	3/26	58	19.4	0.0	18.4 h
New Dutchman Flat #2	6400	3/30	130	55.6	23.3	57.5 h
Ochoco Meadows	5200	3/30	29	9.3	T	11.0
Paulina Lake	6330	3/23	57	18.8	10.0	- -
Paulina Prairie	4285	3/23	6	2.2	0.0	- -
Snow Mountain	6300	3/31	35	10.9	6.4	14.8 h
Tamarack	4800	3/24	24	7.8	0.0	- -
Tangent	5400	3/30	64	25.1	3.8	23.3 h
Three Creeks Butte	5200	3/31	36	15.0	0.0	- -
Three Creeks Meadows	5600	3/31	55	21.5	T	23.3
Waldo Lake	5500	3/25	111	38.6	9.2	35.5
Willamette Pass	5600	3/26	130	48.2	16.4	46.2 h
Windigo Pass	5800	3/27	130	49.9	17.5	48.5 h

"The Conservation of Water begins with the Snow Survey"

Area 6

WATER SUPPLY OUTLOOK
HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS
OREGON

as of

APRIL 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 irrigation season is opening in the Hood River and Wasco county areas with an adequate water supply outlook for all usual agricultural operations.

SNOW COVER

Water content of the mountain snowpack is 107 percent average and about 7 times greater than last year at this date. It is significant for expected streamflow that low-elevation snow is much heavier this year. As an example, the snow at Greenpoint Reservoir this season is 50 inches deep and contains 17.7 inches of water. Last year at this date there was no snow.

SOIL MOISTURE

Moisture in the soil mantle under the snowpack is probably better than average and will favor runoff from the snowmelt.

RESERVOIR STORAGE

One month ago Clear Lake Reservoir held only 1,471 acre feet for the Juniper Flat Irrigation District. Present storage is 1,791 a.f. and we hope the spring break-up and beginning of flow will rapidly improve the situation.

STREAMFLOW

Flow of Hood River, West Fork is forecast at 320,000 acre feet or 103 percent April through September. The main river near its mouth is forecast at 375,000 a.f. for the same six months and the 1963 flow was 250,000 acre feet.

The Mile Creeks, as well as Mill and Mosier creeks, are expected to have average flows with near average peaks.

Flow of White River near Tygh Valley is forecast at 185,000 acre feet or 104 percent average for the six months April through September. Last year's flow for the same period was about 95,000 acre feet.

Rock, Gate, Three-mile and Badger creeks are expected to have flows near average in volume and duration.

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Aldridge Ditch	Average	Average
Badger Creek	Average	Average
Dee Irrigation District	Average	Average
East Fork Irrig. Dist.	Average	Average
Farmers Irrig. Dist.	Average	Average
Hood River Irrig. Dist.	Average	Average
Juniper Flat Irrig. Dist.	Average	Average
Middle Fork Irrig. Dist.	Average	Average
Mile Creeks	Average	Average
Mill Creek	Average	Average
Mount Hood Irrig. Dist.	Average	Average
Rock-Gate-Threemile Crs.	Average	Average
Tygh Creek	Average	Average
White River	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Clear Lake	11.8	1.8	4.8	- -

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of April 1, 1964

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
1210	Hood near Hood River[d]	320	April-July	311	103
		375	April-Sept.	365	103
1185	Hood, West Fork near Dee	160	April-July	151	106
		185	April-Sept.	174	106
1015	White below Tygh Valley	167	April-July	161	104
		185	April-Sept.	178	104

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) 1943-57 AVERAGE
Brooks Meadows	4300	3/31	36	14.6	0.0	15.0
Clear Lake	3500	3/30	34	12.7	T	16.1
Clear Lake (Experimental)	3500	3/30	50	18.5	T	- -
Cooper Spur	3490	4/1	27	11.1	2.7	- -
Greenpoint Reservoir	3400	4/1	50[j]	17.7[j]	0.0	17.7[h]
Knebal Springs	3850	3/31	23	8.8	0.0	- -
Lambert Point	7000	[b]				
Parkdale	1770	4/1	0	0.0	- -	- -
Phlox Point	5600	3/31	180	81.7	22.8	70.7
Red Hill	4400	3/28	149	62.6	3.3	54.3[h]
Still Creek	3700	3/30	84	35.1	2.5	30.1
Switchback	3255	4/3	57	24.2	- -	- -
Tilly Jane	6000	4/2	120	48.4	10.9	50.0[h]
Ulrich Ranch Junction	3350	3/31	6	2.8	0.0	- -
Umbrella Falls	5400	[b]				
Upper Valley	2530	4/1	0	0.0	- -	- -

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

WATER SUPPLY OUTLOOK
HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS
OREGON

as of

APRIL 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

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Middle Fork Irrig. Dist.	Average	Average
Mile Creeks	Average	Average
Mill Creek	Average	Average
Mount Hood Irrig. Dist.	Average	Average
Rock-Gate-Threemile Crs.	Average	Average
Tygh Creek	Average	Average
White River	Average	Average

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Parkdale	1770	4/1	0	0.0	- -	- -
Phlox Point	5600	3/31	180	81.7	22.8	70.7
Red Hill	4400	3/28	149	62.6	3.3	54.3[h]
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Ulrich Ranch Junction	3350	3/31	6	2.8	0.0	- -
Umbrella Falls	5400	[b]				
Upper Valley	2530	4/1	0	0.0	- -	- -

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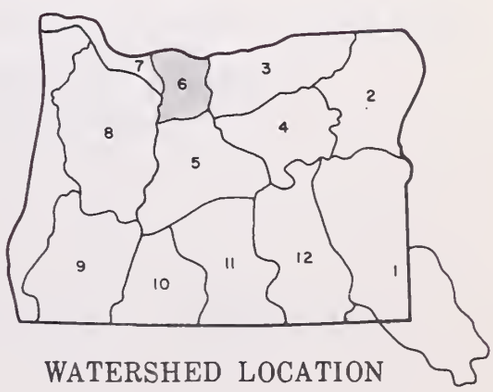
HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- ● Snow Course
- † Aeriol Snow Depth Goge
- ⚑ Soil Moisture Station



WATERSHED LOCATION

"The Conservation of Water begins with the Snow Survey"

Area 7

WATER SUPPLY OUTLOOK
LOWER COLUMBIA WATERSHEDS
OREGON

as of

APRIL 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

Water supply outlook is good throughout the Columbia Basin for both irrigation and power. Streamflow forecasts for the upper Columbia and its tributaries range from average to slightly above average for the April-September 1964 period. Flow of the Snake River and its tributaries above Brownlee Reservoir is forecast at slightly less than average, but no material shortages are anticipated. Tributary streams in Oregon have near average flows in prospect. Flows from 110 to 125 percent of average are expected for the east slope of the Cascade Range in Washington and on the Clearwater and Spokane. The flow of the Columbia at The Dalles will be well in excess of that for 1963 but very little above average.

SNOW COVER

A near maximum of record increase in snowpack occurred during January. February snowfall was generally deficient, but substantial increases occurred again in the first fifteen days of March. Total seasonal snowfall to date is up to 125 percent of average on the upper Columbia, Okanogan, Chelan, Wenatchee, Yakima, Clearwater and the Spokane. Upper Snake River tributaries in Idaho and eastern Oregon have near average snowpack. The Willamette snowpack is about 110 percent of average.

SOIL MOISTURE

Soil moisture tends to be above average and near field capacity except for the immediate area of the Continental Divide in Montana and Wyoming where soils are dry.

Streamflow over the upper basin has been deficient during the winter months and especially so on Snake River tributaries. During March, the flow of the Columbia River above Grand Coulee has been near average.

The flow of the Columbia at The Dalles*, Oregon has been less than average since October 1. The record by months is as follows:

Month	Percent of Average Discharge (1943-57)
October	87 Adjusted for storage
November	85 " " "
December	74 " " "
January	79 " " "
February	66 " " "
March	66 " " "

* From preliminary data furnished by Current Records Center, U. S. Geological Survey, Portland, Oregon.

Report prepared by
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STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of April 1, 1964

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
1057	Columbia at The Dalles	107,600 74,000	April-Sept. April-June	106,100 72,000	101 103

HISTORICAL DATA (Columbia River at The Dalles)

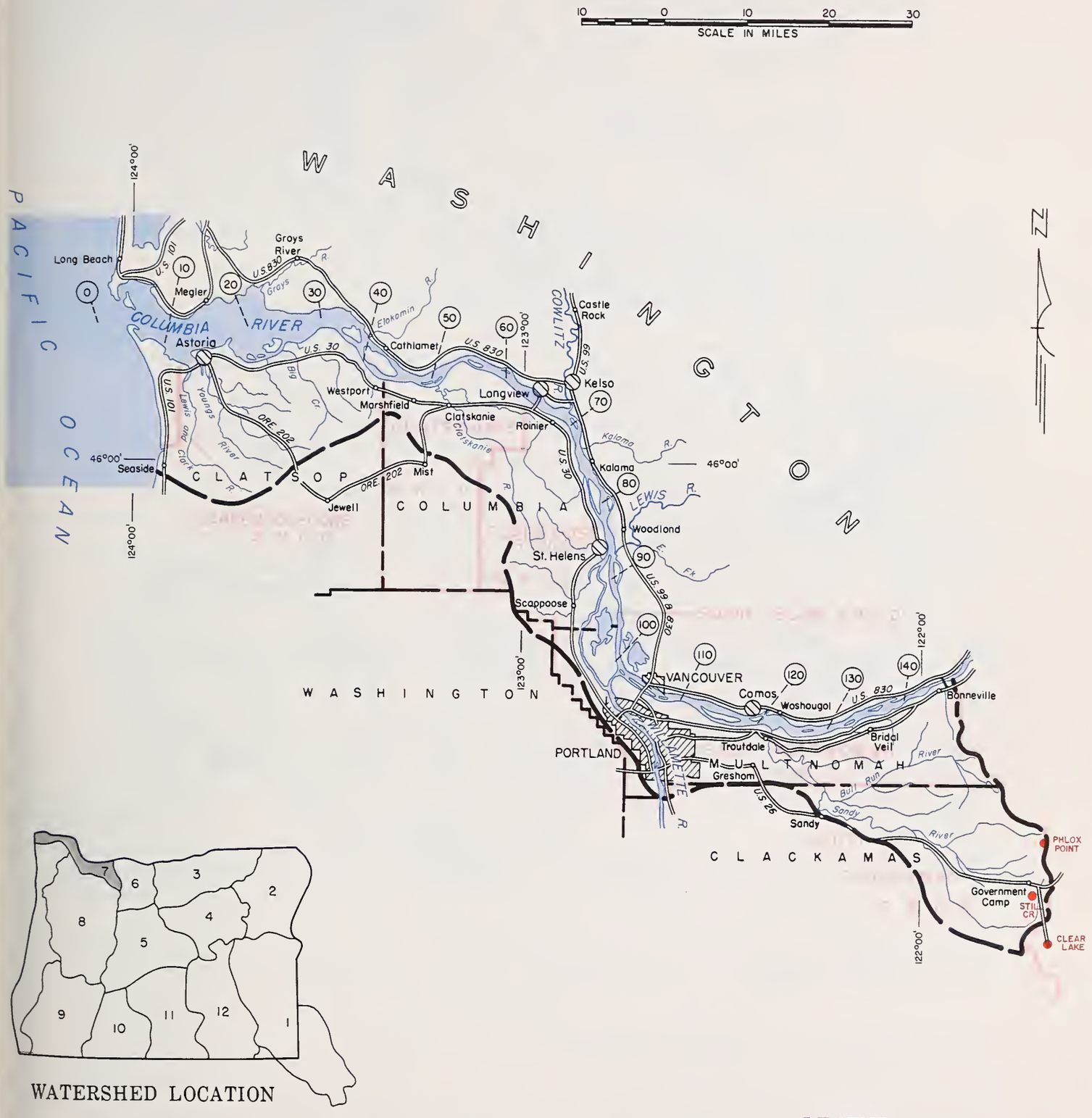
YEAR	STREAMFLOW[d] (1,000 A.F.) APR.— SEPT.	APR.— JUNE	MAY—JUNE	PEAK (1,000 c.f.s)	DATE
1943	115,000	75,300	52,400	541	June 21
1944	61,900	39,200	32,100	326	June 19
1945	81,600	54,600	47,300	505	June 8
1946	108,100	75,400	59,600	581	May 30
1947	100,300	70,000	56,800	536	May 11
1948	130,500	94,600	81,900	999	May 31
1949	95,700	71,400	56,000	622	May 18
1950	120,400	74,700	61,200	744	June 25
1951	113,000	75,600	59,100	597	May 26
1952	107,700	77,500	57,300	557	May 28
1953	100,600	64,900	55,800	609	June 17
1954	119,500	70,500	59,300	561	May 23
1955	99,500	58,300	50,300	545	June 26
1956	131,400	96,900	75,800	815	June 3
1957	105,700	80,500	67,200	700	May 22
1943-57 Avg.	106,100	72,000	58,100	616	
1958	97,700	72,000	58,600	593	May 31
1959	112,500	71,900	58,900	555	June 23
1960	97,000	64,000	48,000	442	June 6
1961	101,400	74,400	64,000	699	June 8
1962	94,600	64,100	49,200	460	June 5

LOWER COLUMBIA RIVER FLOOD STAGES (with 9.5' tide at Astoria)

VANCOUVER GAGE (Weather Bu.)	FLOW AT THE DALLES (1,000 c.f.s)	DRAINAGE DISTRICT PUMPHOUSE SANDY	SAUVIE ISL.	SCAPPOOSE	DEER ISL.	RAINIER	BEAVER	WOODSON
		RIVER MILES 118.9	96.0	91.0	77.0	62.0	52.0	47.0
35 (1894)	1210	41.2	34.2	33.3	28.5	21.9	17.5	15.5
34	1160	40.5	33.5	32.5	27.7	21.2	17.0	15.0
33	1100	39.6	32.4	31.4	26.7	20.2	16.1	14.3
32	1050	38.9	31.5	30.5	25.7	19.5	15.4	13.7
31 (1948)	1000	38.0	30.7	29.5	25.1	18.8	14.7	13.0
30	940	36.6	29.5	28.5	24.3	18.1	14.0	12.4
29	890	35.5	28.5	27.7	23.7	17.5	13.4	11.8
28	840	34.3	27.5	26.7	22.8	17.0	13.0	11.4
27 (1956)	790	33.0	26.5	25.6	21.8	16.2	12.5	11.0
26 (1950)	750	32.1	25.5	24.6	20.9	15.5	12.2	10.7
25	700	30.7	24.2	23.2	19.7	14.6	11.7	10.3
24	660	29.7	23.0	22.2	19.0	14.1	11.4	10.2
23	630	29.0	22.3	21.4	18.4	13.6	11.2	10.0
22	590	28.1	21.4	20.3	17.2	13.0	10.9	9.7
21	560	27.2	20.7	19.5	16.4	12.6	10.6	9.6
20	530	26.2	19.8	18.6	15.5	12.1	10.2	9.4
19	510	25.5	19.2	18.0	15.0	11.8	10.0	9.3
18	480	24.4	18.3	17.2	14.3	11.4	9.8	9.1
17	450	23.4	17.4	16.4	13.7	11.0	9.6	8.9
16	430	22.4	16.5	15.5	13.0	10.5	9.3	8.7

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

LOWER COLUMBIA WATERSHEDS



WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- (50) River Miles
- Snow Course

Lower Columbia Watersheds

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
WILLAMETTE WATERSHEDS
OREGON

as of
APRIL 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 outlook for water supplies in the Willamette Valley is "average". March storms brought good increases to the snowpack along the Cascades and reservoir storage continued to improve.

SNOW COVER

Water content of the snowpack increased rapidly during March and is now 113 percent of the 1943-57 average for April 1. This is almost 6 times the snow water on this watershed last year at this time.

SOIL MOISTURE

Watershed soils are well primed and are expected to absorb little moisture from the melting snowpack.

RESERVOIR STORAGE

Willamette Valley reservoirs are filling according to a pre-determined flood control plan designated by the Corps of Engineers as spring runoff progresses.

STREAMFLOW

Preliminary data furnished by the U. S. Geological Survey, Portland, Oregon indicates the flow of the Middle Fork of the Willamette was 85 percent of average during March and has been only 67 percent average since October 1.

Streamflow forecasts were raised 6 to 13 percent after above average March increases to the snowpack on most of the upper watershed and now range from 97 percent for the McKenzie near Vida to 106 percent for the Oak Grove Fork of the Clackamas for the April-September period.

The North Santiam is expected to flow 950,000 acre feet or 98 percent of the 1943-57 average and the South Santiam 650,000 acre feet or 100 percent during the April-September period.

The Clackamas at Big Bottom forecast is for 190,000 acre feet April-September or 103 percent of average and 925,000 acre feet at Estacada or 105 percent.

The Middle Fork Willamette is expected to flow 920,000 acre feet or 101 percent and the Willamette at Salem 5,350,000 acre feet or 98 percent during the April-September period.

Smaller streams are expected to produce near average water during the irrigation season.

Report prepared by
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WATER SUPPLY OUTLOOK expressed as "Poor", "Foir" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Calapooya	Average	Average
Clackamas	Average	Average
McKenzie	Average	Average
Molalla	Average	Average
Santiam, North	Average	Average
Santiam, South	Average	Average
Willamette, Coast Fork	Average	Average
Willamette, Middle Fork	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottage Grove	30.8*	16.4	22.2	19.2
Cougar	219.3*	62.8	- -	- -
Detroit	299.9*	128.8	216.8	147.7
Dorena	70.5*	39.5	48.3	36.8
Fern Ridge	94.2*	67.1	87.4	63.5
Hills Creek	249.0*	125.0	155.0	- -
Lookout Point	337.2*	149.2	220.0	- -
Timothy Lake	61.6	39.3	- -	- -

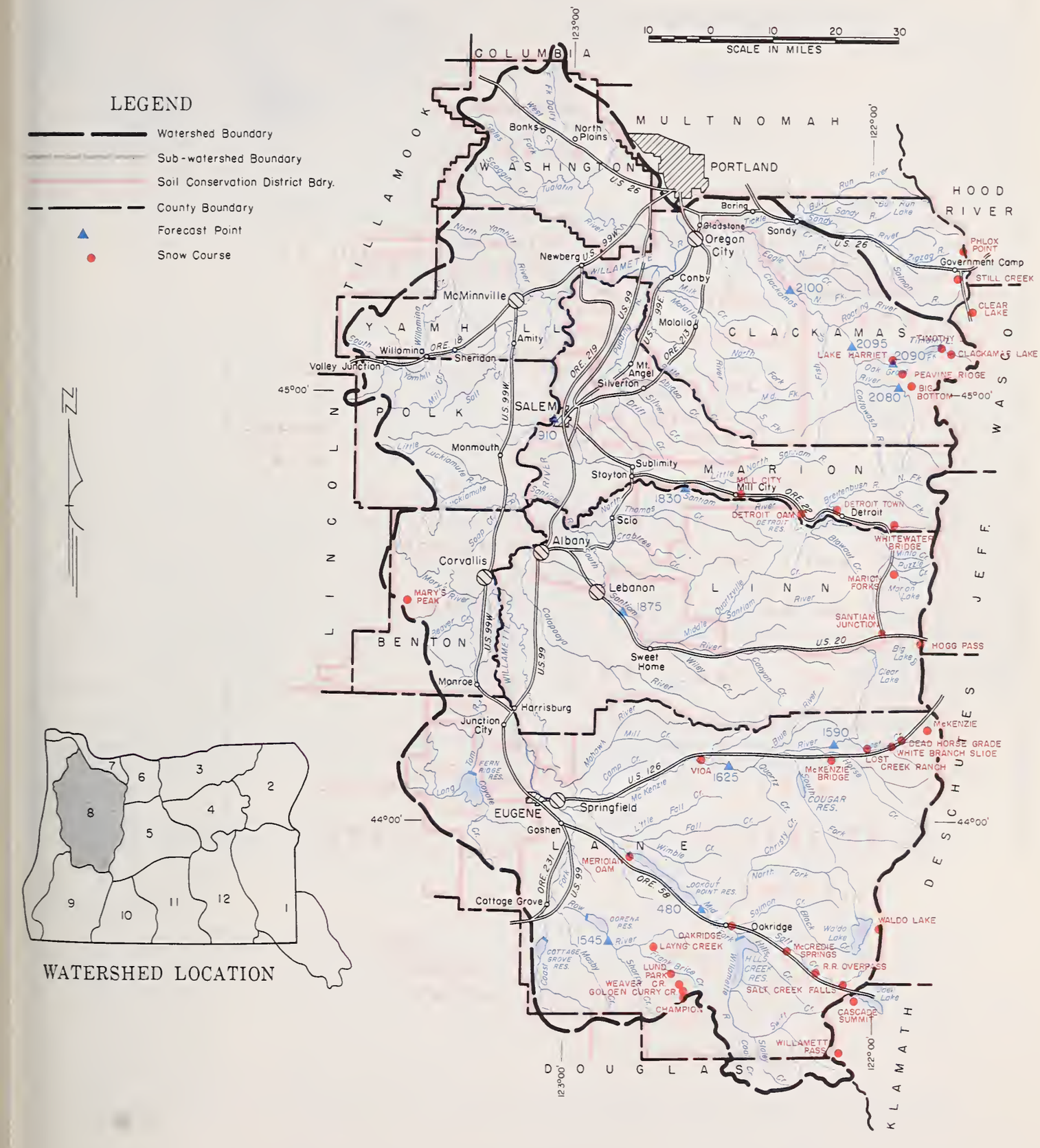
*Multiple purpose reservoir--space reserved primarily for flood runoff.

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of April 1, 1964

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT. OF AVERAGE[i]
NO.	NAME				
2080	Clackamas at Big Bottom	190	April-Sept.	184	103
		155	April-July	150	103
2100	Clackamas at Estacada	925	April-Sept.	879	105
		810	April-July	763	106
2095	Clackamas above Three Lynx	700	April-Sept.	674	104
		600	April-July	578	104
1590	McKenzie at McKenzie Bridge	625	April-Sept.	640	98
		480	April-July	488	98
1625	McKenzie near Vida	1320	April-Sept.	1362	97
		1090	April-July	1120	97
2090	Oak Grove Fork above Power Intake	210	April-Sept.	198	106
		165	April-July	156	106
1545	Row near Dorena	117	April-Sept.	114	103
		112	April-July	109	103
1830	Santiam, North at Mehama[d]	950	April-Sept.	968	98
		850	April-July	866	98
1875	Santiam, South at Waterloo	650	April-Sept.	652	100
		615	April-July	616	100
1480	Willamette, Mid. Fk. blw. N. Fk. nr. Oakridge	920	April-Sept.	909	101
		812	April-July	804	101
1910	Willamette at Salem[d]	5350	April-Sept.	5461	98
		4840	April-July	4942	98

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

WILLAMETTE WATERSHEDS



SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Big Bottom	2118	3/29	5	2.2	2.3	9.2 h
Cascade Summit	4880	3/30	93	37.4	8.8	36.7
Champion	4500	3/31	106	40.9	9.7	33.8
Clackamas Lake	3400	3/26	55	20.5	0.0	17.0 h
Clear Lake	3500	3/30	34	12.7	T	16.1
Clear Lake (Experimental)	3500	3/30	50	18.5	T	- -
Dead Horse Grade	3800	3/30	72	32.4	0.6	24.1 h
Detroit Town	1610	3/30	0	0.0	0.0	T h
Detroit Dam	1580	3/30	0	0.0	0.0	0.0 h
Golden Curry Creek	3136	3/31	41	17.4	1.0	6.9 h
Hogg Pass	4750	3/30	125	49.1	11.5	50.6
Lake Harriet	2045	3/30	0	0.0	0.0	0.2 h
Layng Creek	1200	3/31	0	0.0	0.0	0.0 h
Lost Creek Ranch	1956	3/30	18	6.4	0.0	1.5 h
Lund Park	1740	3/31	0	0.0	0.0	0.0 h
Marion Forks	2730	3/30	Plowed out		0.0	16.7
Marys Peak	3620	3/29	53	21.7	9.1	15.9 h
McCredie Springs	2120	3/30	0	0.0	0.0	0.0
McKenzie	4800	3/30	132	54.6	12.6	51.2 h
McKenzie Bridge	1372	3/30	0	0.0	0.0	0.0
Meridian Dam	750	3/30	0	0.0	0.0	0.0 h
Mill City	826	3/30	0	0.0	0.0	0.0 h
Oakridge	1310	3/30	0	0.0	0.0	0.0
Peavine Ridge	3500	3/30	71	27.5	2.7	23.8
Phlox Point	5600	3/31	180	81.7	22.8	70.7
Railroad Overpass	2750	3/30	17	6.2	0.0	3.0 h
Salt Creek Falls	4000	3/30	70	26.7	1.4	20.9 h
Santiam Junction	3990	3/30	74	32.3	T	29.4
Still Creek	3700	3/30	84	35.1	2.5	30.1
Timothy Lake	3295	3/26	59	22.9	1.6	- -
Vida	800	3/30	0	0.0	0.0	0.0
Waldo Lake	5500	3/25	111	38.6	9.2	35.5
Weaver Creek	2440	3/31	T	T	0.0	2.7 h
White Branch Slide	2800	3/30	37	15.3	0.0	6.6 h
Whitewater Bridge	2175	3/30	7	2.9	0.0	5.7 h
Willamette Pass	5600	3/26	130	48.2	16.4	46.2 h

Errata: Cascade Summit water content published in March bulletin read 26.8--should have read 26.0.

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
ROGUE, UMPQUA, WATERSHEDS
OREGON

as of
APRIL 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 irrigation season opens with an adequate water supply outlook for all usual agricultural operations in the Rogue and Umpqua basins. Reservoired water supplies are greater than average and streams are expected to produce about average amounts in the next six months.

SNOW COVER

Water content of the mountain snowpack is above average with 107 percent on Rogue watersheds and 114 percent on the Umpqua. Snow cover is generally 4 to 6 times as great as last year.

SOIL MOISTURE

The soils under the snowpack are relatively well re-charged with moisture as a result of fall rains. This means that only a small portion of the snow-melt runoff will be absorbed by the soils.

RESERVOIR STORAGE

Water stored in Fourmile and Fish Lakes for the Medford and Rogue River Valley Irrigation Districts now totals 18,200 acre feet compared with 14,500 a.f. last year. This is about average and will be an adequate supply coupled with expected streamflow.

The Talent Irrigation District has a total of 93,200 acre feet in storage in Hyatt, Howard and Emigrant reservoirs compared with 97,000 acre feet last year. This will also be an adequate supply coupled with streamflow yet to come.

STREAMFLOW

Flow of the Rogue River at Raygold is forecast at 975,000 acre feet or 97 percent average for April through September and flow of the Rogue above Prospect for the same period is forecast at 349,000 acre feet or 99 percent average. This flow should enable the Grants Pass Irrigation District to complete all irrigation operations satisfactorily without the need to employ canal alternation because of low flow.

The Eagle Point Irrigation District should have sufficient water available from the Big Butte Creek source this season.

The Applegate and Illinois Rivers will provide slightly more than average water supplies this year with flows forecast at 102 and 104 percent average, respectively.

Flow of the North Umpqua River below Lemolo Reservoir is forecast at 95 percent average April through September and the Clearwater is expected to flow in the same relative proportion.

Report prepared by
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209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Althouse Creek	Average	Average
Applegate River, Big	Average	Average
Applegate River, Little	Average	Average
Ashland Creek	Average	Average
Butte Creek, Little	Average	Average
Butte Creek, Big	Average	Average
Cow Creek	Average	Average
Deer Creek	Average	Average
Elk Creek	Average	Average
Emigrant Creek (abv. Res.)	Average	Average
Evans Creek	Average	Average
Gold Hill Irrigation Dist.	Average	Average
Grants Pass Irrig. Dist.	Average	Average
Grave Creek	Average	Average
Illinois River, East Fork	Average	Average
Illinois River, West Fork	Average	Average
Jump-off-Joe Creek	Average	Average
Neil Creek	Average	Average
Red Blanket Creek	Average	Average
Rogue River	Average	Average
Sucker Creek	Average	Average
Table Rock Irrig. Dist.	Average	Average
Thompson Creek	Average	Average
Wagner Creek	Average	Average
Williams Creek	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1964

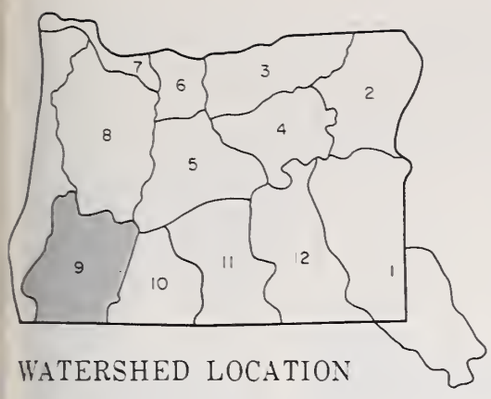
RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Emigrant Gap	39.0	36.0	37.0	7.4
Fish Lake	7.8	4.8	5.2	5.5
Fourmile Lake	16.1	13.4	9.3	9.2
Howard Prairie	60.0	44.7	45.4	- -
Hyatt Prairie	16.1	12.5	14.6	8.2

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of April 1, 1964

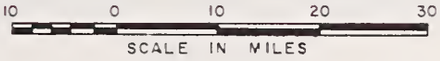
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
3620	Applegate near Copper	132	April-Sept.	131	102
3145	Clearwater above Trap Creek [d]	69	April-Sept.	73	95
5045	Fourmile Lake net Inflow [d]	8.0	April-Sept.	7.4	108
5140	Hyatt Reservoir net Inflow [d]	6.8	April-Sept.	6.2	110
3770	Illinois River at Kerby	200	April-July	190	105
		204	April-Sept.	196	104
3425	Little Butte, N. Fk. at Fish Lake nr. Lake Cr. [d]	17.5	April-Sept.	16.9	104
3415	Little Butte, So. Fk. nr. Lake Creek	45	April-July	42	107
	Note: Minimum flow will drop to 100 c.f.s. by June 13				
3280	Rogue above Prospect	290	April-July	293	99
		349	April-Sept.	351	99
3320	Rogue, South Fork near Prospect [d]	70	April-July	71	99
		82	April-Sept.	83	99
3350	Rogue below South Fork	595	April-July	608	98
		735	April-Sept.	749	98
3590	Rogue at Raygold near Central Point	810	April-July	842	96
		975	April-Sept.	1004	97
3615	Rogue at Grants Pass	935	April-Sept.	974	96
3135	Umpqua, No. blw. Lemolo Res. nr Toketee Falls [d]	177	April-Sept.	186	95

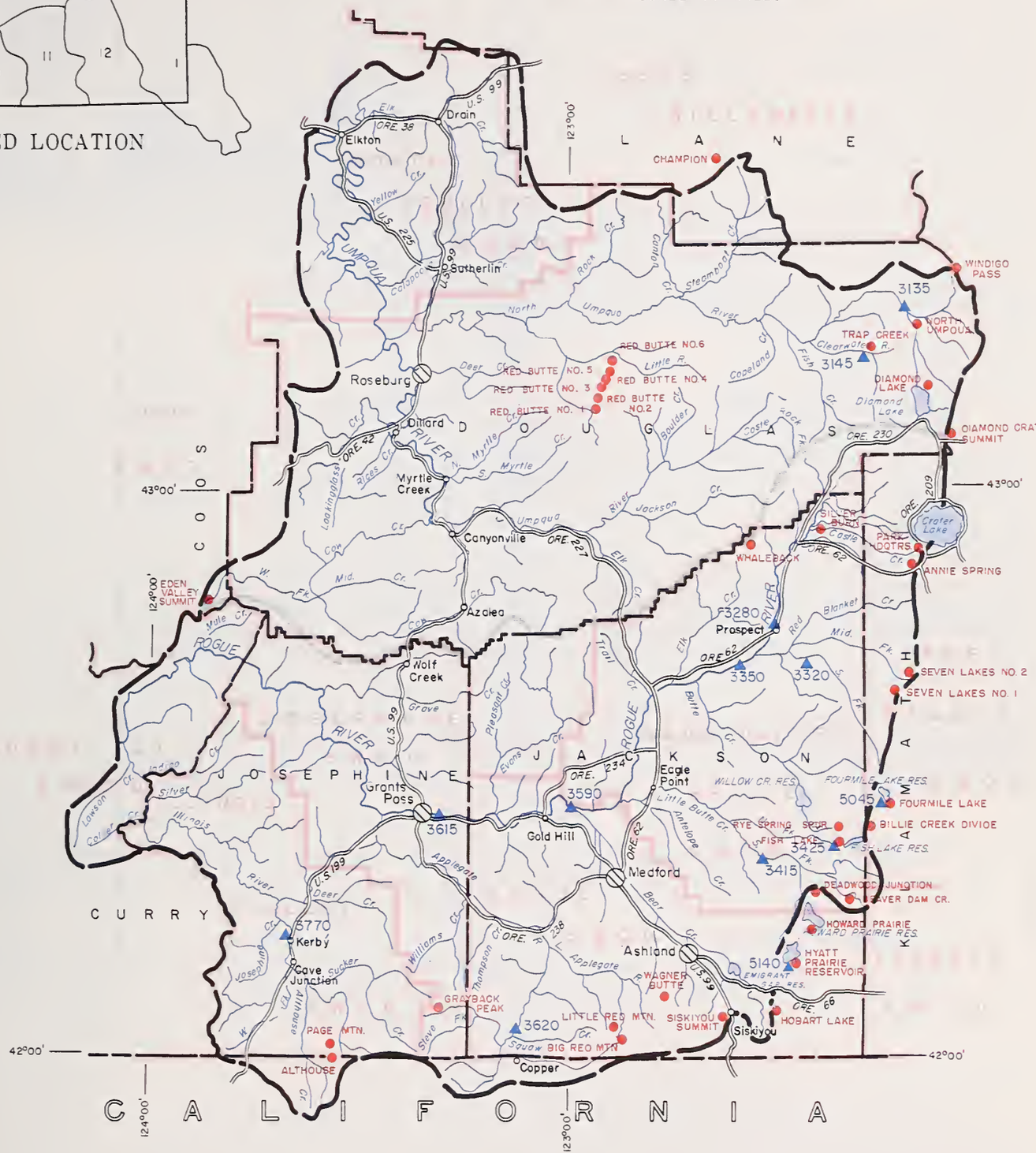
(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

ROGUE, UMPQUA WATERSHEDS



WATERSHED LOCATION





LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- ● Snow Course

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Ft. Klamath Valley	Average	Average
Lost River (Clear Lake)	Average	Average
Lost River (Gerber)	Average	Average
Lost River (Willow Res.)	Average	Average
Sprague River	Average	Average
Upper Klamath Lake	Average	Average
Williamson River	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Clear Lake	440.2	105.5	136.8	259.0
Gerber	94.0	38.9	46.2	54.9
Upper Klamath Lake	584.0	412.0	530.5	437.2

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of April 1, 1964

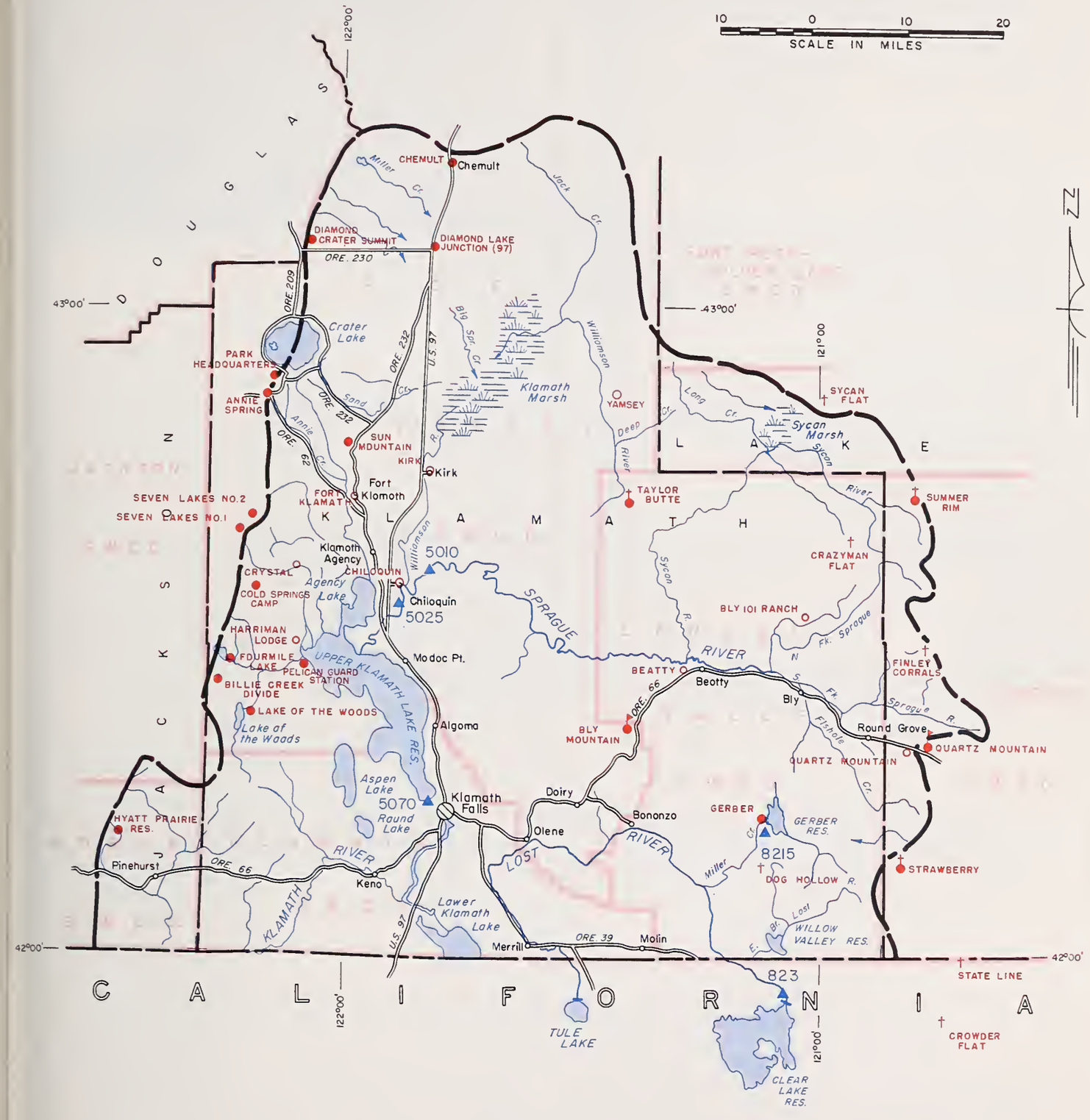
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
923	Clear Lake Reservoir Inflow[k]	55	April-Sept.	50	110
8215	Gerber Reservoir Inflow[k]	28	April-Sept.	25	112
5010	Sprague near Chiloquin	280	April-Sept.	296	95
5070	Upper Klamath Lake net Inflow[k]	600	April-Sept.	632	95
5025	Williamson below Sprague River	465	April-Sept.	486	96

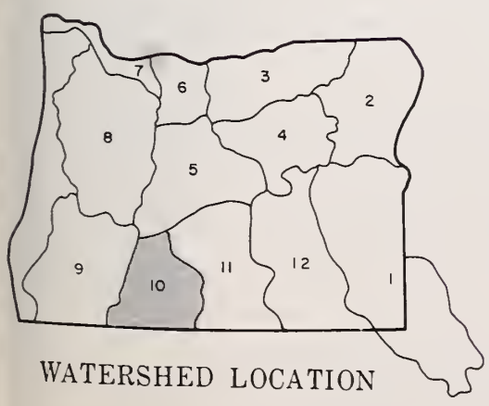
SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Bly Mountain	5090	42	14.0	3-27-64	10.5	12.8	10.4[f]

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

KLAMATH WATERSHEDS





WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- Forecast Point
- Snow Course
- Aerial Snow Depth Gage
- COPCO Snow Station
- Soil Moisture Station

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Annie Spring	6018	3/28	115	45.4	21.0	49.2
Beatty (PP&L)	4300	3/30	0	0.0	0.0	0.0
Billie Creek Divide	5300	3/26	86	30.0	1.0	26.3
Bly Mountain	5090	3/27	30	10.5	0.0	- -
Bly 101 Ranch (PP&L)	4800	3/30	5	2.3	0.0	0.1
Chemult	4760	3/27	33	10.6	0.2	10.4
Chiloquin (PP&L)	4187	3/31	0	0.0	T	T
Cold Springs Camp	6100	3/27	108	41.4	10.7	- -
Crazyman Flat[e]	6100	3/24	42	14.7	- -	- -
Crowder Flat[e] (Calif.)	5200	3/24	22	7.7	0.0	0.2[h]
Crystal (PP&L)	4200	3/30	27	10.3	0.0	6.9
Diamond-Crater Summit	5800	3/24	109	38.5	13.0	- -
Diamond Lake Junction (97)	4600	3/24	28	8.9	0.0	- -
Dog Hollow[e]	4900	3/24	12	4.2	0.0	- -
Finley Corrals[e]	6000	3/24	60	21.0	- -	- -
Fort Klamath (PP&L)	4150	3/28	12	4.9	0.0	0.9
Gerber	4850	3/30	14	4.2	0.0	- -
Harriman (Tomahawk) (PP&L)	4200	3/31	20	8.4	0.0	0.9
Hyatt Prairie Reservoir	4900	3/30	34	12.6	- -	9.5
Kirk (PP&L)	4533	3/31	13	6.4	T	1.9
Lake of the Woods	4960	3/26	50	15.8	0.4	11.9
Park Headquarters	6450	3/28	150	62.5	35.0	61.4[h]
Pelican Guard Station	4150	3/27	19	7.3	0.0	- -
Quartz Mountain	5320	3/27	28	8.6	T	5.4
Quartz Mountain (PP&L)	5504	3/27	28	8.2	0.9	5.6
Seven Lakes #1	6800	3/31	149	61.3	25.8	62.6[h]
Seven Lakes #2	6200	3/30	117	47.3	13.1	46.1
State Line[e] (Calif.)	5750	3/24	42	14.7	0.0	- -
Strawberry	5600	3/27	29	9.0	0.0	8.2[h]
Summer Rim	7200	3/30	45	15.9	7.3	19.7
Sun Mountain	5350	3/23	73	27.0	3.6	29.1
Sycan Flat[e]	5500	3/24	24	8.4	- -	- -
Taylor Butte	5100	3/25	17	6.3	0.0	4.3[h]
Yamsey (PP&L)	4600	3/30	6	1.8	- -	1.0

"The Conservation of Water begins with the Snow Survey"

Area 11

WATER SUPPLY OUTLOOK
LAKE COUNTY, GOOSE LAKE WATERSHEDS
OREGON

as of
APRIL 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 irrigation season has opened in Lake County with an adequate water supply outlook seemingly assured. Reservoired water supplies are somewhat below average but streamflow is expected to be slightly above average.

SNOW COVER

Water content of the mountain snowpack is 158 percent of the April 1 average and is 8 times greater than a year ago when 10 out of 17 snow courses had no snow at all.

SOIL MOISTURE

Soil moisture under the snowpack, as measured at Camas Creek station, is about the same as last year and is 88 percent of capacity. This condition will favor runoff of snowmelt water.

RESERVOIR STORAGE

Inflow to reservoirs in the county had only just begun, as of April 1st, due to a long delay in the spring break-up. However, Cottonwood and Drews Valley reservoirs held 42,500 acre feet between them at month's end compared with 55,100 acre feet a year ago when winter conditions had not held the streams so tightly checked.

STREAMFLOW

Inflow to Drews Reservoir during the April-July period is forecast at 37,000 acre feet or 110 percent of average. Coupled with water now held in storage, this will be an adequate supply for Lakeview Water Users, Incorporated this season.

Warner Valley streams are expected to produce satisfactory water supplies. Deep Creek is forecast at 74,000 acre feet or 104 percent average April through June. Twentymile Creek is forecast at 22,000 acre feet or 111 percent average for the same three months and Honey Creek is expected to flow 104 percent average or 17,000 acre feet for the same period.

The Chewaucan River is forecast at 104 percent average with flow expected to be about 85,000 acre feet April through June.

Smaller streams in the county are expected to have about average flows.

Report prepared by
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209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Chewaucan River	Average	Average
Crooked Creek	Average	Average
Deep Creek	Average	Average
Dry Creek	Average	Average
East Side Goose Lake	Average	Average
Guano Lake	Average	Average
Honey Creek	Average	Average
Lakeview Water Users Assn.	Average	Average
Rock Creek (Hart Mtn.)	Average	Average
Silver-Buck Creeks	Average	Average
Summer Lake	Average	Average
Thomas Creek	Average	Average
Twentymile Creek	Average	Average
Warner Lakes	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottonwood	9.1*	1.4	7.2	1.5
Drew	63.0	41.1	47.9	48.7

*Usable capacity for Cottonwood Reservoir changed from 8.7 to 9.1 because of earth spillway plug.

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of April 1, 1964

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
3840	Chewaucan near Paisley	85	April-June	82	104
3715	Deep above Adel	74	April-June	71	104
3385	Drew Reservoir net Inflow	37	April-July	34	110
3785	Honey near Plush	17.0	April-June	16.3	104
3660	Twentymile near Adel	22	April-June	20	111

SOIL MOISTURE

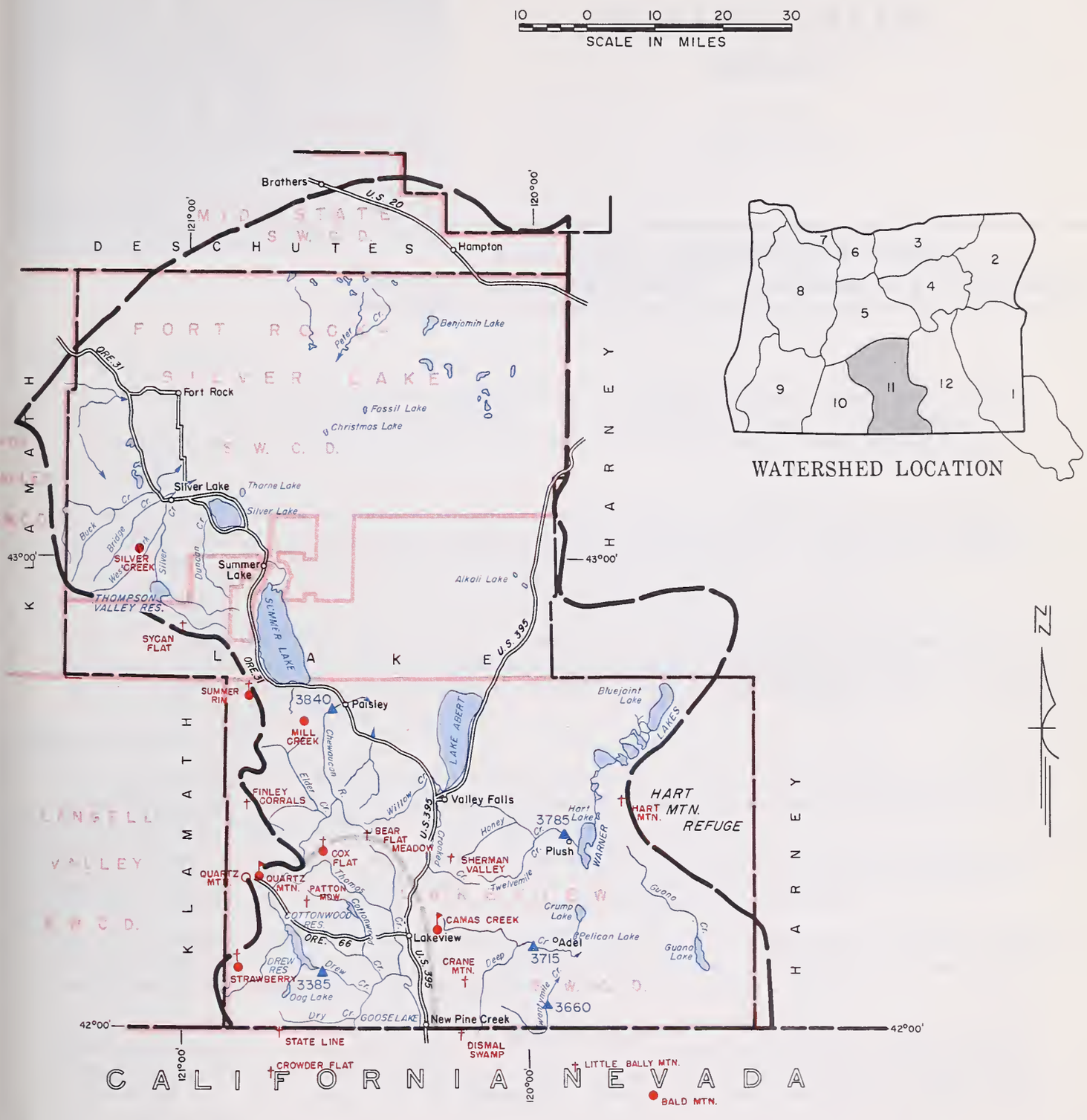
STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Camas Creek	5720	42	14.5	3-27-64	12.7	13.0	10.9
Quartz Mountain	5320	48	15.3	3-27-64	8.4	11.0	8.4

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) 1943-57 AVERAGE
Bald Mountain (Nev.)	6720	3/31	86	30.1	0.0	3.1
Bear Flat Meadow[e]	5900	3/24	33	11.6	1.7	- -
Camas Creek	5720	3/27	35	12.4	0.6	11.8
Cox Flat[e]	5750	3/24	35	12.2	0.0	- -
Crane Mountain[e]	6020	3/24	15	5.2	0.0	- -
Crowder Flat[e] (Calif.)	5200	3/24	22	7.7	0.0	0.2[h]
Dismal Swamp[e] (Calif.)	7000	3/24	52	18.2	6.0	- -
Finley Corrals[e]	6000	3/24	60	21.0	- -	- -
Hart Mountain[e]	6350	3/24	6	1.2	0.0	- -
Little Bally Mountain[e] (Nev.)	6600	3/24	8	2.8	0.0	- -
Mill Creek	6200	3/31	22	8.4	2.3	9.1
Patton Meadows[e]	6800	3/24	50	17.5	3.6	- -
Quartz Mountain (PP&L)	5504	3/27	28	8.2	0.9	5.6[h]
Quartz Mountain	5320	3/27	28	8.6	T	5.4
Sherman Valley[e]	6600	3/24	38	13.3	0.8	- -
Silver Creek	4900	3/30	5	2.1	0.0	1.6
State Line[e] (Calif.)	5750	3/24	42	14.7	0.0	- -
Strawberry	5600	3/27	29	9.0	0.0	8.2[h]
Summer Rim	7200	3/30	45	15.9	7.3	19.7
Sycan Flat[e]	5500	3/24	24	8.4	- -	- -

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

LAKE COUNTY, GOOSE LAKE WATERSHEDS



WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- ▲ Forecast Point
- ● Snow Course
- † Aerial Snow Depth Gage
- O COPCO Snow Station
- ⊢ Soil Maisture Station

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
HARNEY BASIN WATERSHEDS
OREGON

as of
APRIL 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 irrigation season has opened with an adequate water supply outlook for agricultural operations in Harney Basin. The spring break-up, long delayed, is swelling streams in the area which have been frozen up since late November.

SNOW COVER

Water content of the mountain snowpack about April 1 is 88 percent of average in the north half of the basin and 103 percent in the south half. The snow "crop" varies from 3 to 5 times as great as at this date last year.

SOIL MOISTURE

This snowpack lies on watershed soils that are reasonably well re-charged with moisture in the north half of the basin but only about 64 percent of capacity in the south. Watershed soils will definitely absorb some of the snowmelt water, particularly in the south half of the basin.

STREAMFLOW

The past winter has been one of the very few in which some mid-winter runoff has not been experienced. Streams have generally been frozen up since about November 20 and began their spring run about March 27th.

Flow of the Silvies River near Burns is forecast at 99,000 acre feet or 96 percent average for the April-June period. Silver Creek near Riley is forecast to flow 25,000 acre feet or 96 percent average for the April-July period.

The flow of Poison, Prather, Soldier, Mill, Coffeepot, Rattlesnake and Cow creeks is expected to be about of the usual duration and amount. These flows could be extended for a short while by favorable rainfall if it should occur.

Flow of the Blitzen River near Frenchglen is forecast at 57,000 acre feet or 104 percent average for the April-June period. This stream and smaller ones flowing from Steens Mountain which usually benefit from heavy drifts of snow in the upper watersheds will not receive this added boost this year since drifting appears to be less than usual.

Trout Creek near Denio is forecast at 8,500 acre feet or 105 percent average for the April-June period.

Flows of Whitehorse and Willow creeks will probably be somewhat less than their usual amount and duration since snow on those watersheds is about 60 percent less than in 1962 but about 20 percent greater than last year.

Small streams in the Catlow Valley region will flow about their usual amounts with possibly a little longer duration.

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Catlow Valley	Average	Average
Cow Creek	Average	Average
Donner und Blitzen River	Average	Average
Mill-Coffeepot Creeks	Average	Average
Rattlesnake Creek	Average	Average
Silver Creek	Average	Average
Silvies River	Average	Average
Soldier-Prather Creek	Average	Average
Trout Creek	Average	Average
Whitehorse Creek	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) April 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) As of April 1, 1964

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
3960	Donner und Blitzen near Frenchglen	57	April-June	55	104
		69	April-Sept.	67	103
4030	Silver near Riley	25	April-July	26	96
3935	Silvies near Burns	99	April-June	103	96
		102	April-Sept.	107	95
4065	Trout near Denio	8.5	April-June	8.1	105
		9.5	April-Sept.	9.2	103

SOIL MOISTURE

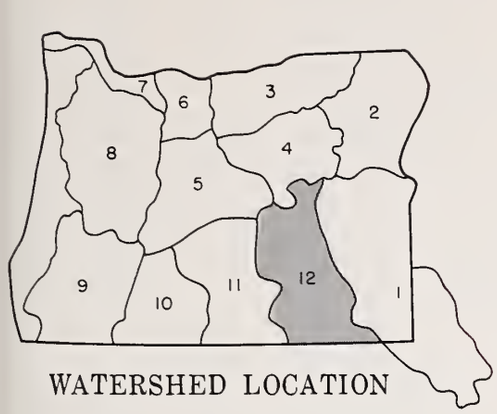
STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Blue Mountain Springs	5900	42	16.9	3-27-64	7.9	13.5	9.7
Fish Creek	7600	48	15.0	3-30-64	9.2	12.7	8.8
Folly Farm	4450	36	12.5	3-8-64	8.3	9.8	10.0[f]
Silvies	6900	48	16.4	3-30-64	10.4	13.3	12.7
Snow Mountain	6300	48	16.7	3-31-64	12.4	14.9	15.1
Starr Ridge	5150	36	10.6	3-30-64	8.5	10.5	9.6
Stinking Water	4800	48	21.9	3-25-64	20.8	21.9	20.6[f]
Willow-Bald	5000	24	6.6	3-31-64	5.4	6.4	3.8

SNOW

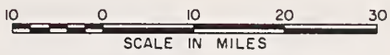
SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) 1943-57 AVERAGE
Blue Mountain Springs	5900	3/27	47	14.5	7.4	17.3
Buck Pasture[e]	5700	3/26	24	9.6	0.2	- -
Buckskin Lake[e]	5200	3/26	0	0.0	0.0	- -
Call Meadows[e]	5340	3/26	18	5.9	0.0	- -
Crow Camp[e]	5500	3/26	12	4.0	0.2	- -
Delintment Lake	5600	3/31	20	5.8	0.8	8.8[h]
Denio Creek[e]	6000	3/26	0	0.0	0.0	- -
Disaster Peak (Nev.)	6500	3/30	35	11.7	T	11.5[h]
Emigrant Butte	5000	3/31	10	3.4	0.0	- -
Fish Creek	7900	3/30	68	28.0	16.2	28.0[h]
Foster Flat[e]	5020	3/26	0	0.0	0.0	- -
Hart Mountain[e]	6350	3/24	6	1.2	0.0	- -
Idlewild Camp	5200	3/30	15	4.8	T	5.0
Izee Summit	5293	3/30	26	8.4	0.0	8.6
Lake Creek R.S.	5120	3/27	36	12.5	0.0	11.2
Oregon Canyon[e]	6950	3/26	15	4.5	0.2	- -
Rock Spring	5100	3/30	18	5.8	T	4.9
Silvies	6900	3/30	39	15.3	3.0	13.9
Snow Mountain	6300	3/31	35	10.9	6.4	14.8[h]
Starr Ridge	5150	3/30	16	5.1	0.0	5.8
Stinking Water	4800	3/31	T	T	0.0	0.7[h]
Trout Creek[e]	7800	3/26	24	7.2	6.0	- -
"V" Lake[e]	6600	3/26	18	7.2	0.0	- -

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

HARNEY BASIN WATERSHEDS



WATERSHED LOCATION



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OWYHEE, MALHEUR WATERSHEDS (1)

Owyhee River

Number	Name	Sec.	Twp.	Rge.	Elev.
	Antelope Ridge (Ida)	32	8S	1W	5900
	[illegible] Creek (Ida)	10	11S	1E	5700
	Bear Creek (Nev)	31	46N	58E	7800
	Big Bend (Nev)	30	45N	56E	6700
	Blue Mtn Pass	4	38S	42E	5290
	Buckskin, Lower (Nev)	25	45N	39E	6700
	Buckskin, Upper (Nev)	11	45N	39E	7200
	Bull Basin (Ida)	29	12S	5W	5600
	Disaster Peak (Nev)	8	47N	34E	6500
	[illegible] Creek	4	33S	33E	7900
	[illegible] Farm Summit	8	30S	38E	4450
	Fox Creek (Nev)	33	46N	58E	6800
	Dry Canyon (Nev)	31	43N	54E	6700
	Gold Creek (Nev)	31	45N	56E	6600
	Granite Peak (Nev)	22	44N	39E	7800
	[illegible] Pasture (Ida)	31	8S	2W	5800
	Jack Creek, Lower (Nev)	18	42N	53E	6800
	Jack Creek, Upper (Nev)	9	42N	53E	7250
	Jack Peak (Nev)	28	42N	53E	8420
	Jordan Valley	9	30S	46E	4390
	Lookout Butte	2	40S	47E	5650
	Louse Canyon	27	40S	44E	6440
	Martin Creek (Nev)	18	44N	40E	6700
	Midas (Nev)	18	39N	46E	7200
	Mud Flat (Ida)	34	9S	2W	5500
	Oregon Canyon	8	40S	40E	6950
17H6a	Quinn Ridge (Nev)	9	47N	41E	6300
16G11a	Red Canyon (Ida)	32	11S	4W	6500
15H6M	Rodeo Flat (Nev)	36	43N	53E	6800
15H3A	76 Creek (Nev)	6	44N	58E	7100
16F3	Silver City (Ida)	6	5S	3W	6400
18G1MA	Silvies	35	32S	32½E	6900
16G1	South Mountain No.2 (Ida)	35	7S	5W	6340
16F6a	Succor Creek (Ida)	25	3S	5W	6100
15H9M	Taylor Canyon (Nev)	35	39N	53E	6200
15H8	Tremewan Ranch (Nev)	9	39N	55E	5700
16G4MA	Triangle (Ida)	25	7S	3W	5150
18G5a	Trout Creek	10	41S	38E	7800
18G7a	"V" Lake	31	35½S	32½E	6600

Malheur River

Number	Name	Sec.	Twp.	Rge.	Elev.
18E14	Barney Creek	16	14S	36E	5950
18E16M	Blue Mountain Spring	21	15S	35E	5900
18F6a	Buck Pasture	21	29S	35E	5700
18E21a	Bully Creek	10	17S	37E	5300
18F7a	Call Meadows	29	20S	33E	5340
17F2a	Cottonwood-Indian	10	19S	39E	4320
18E19M	Crane Prairie	24	16S	34E	5375
18F8a	Crow Camp	Unsurveyed			
18E20	Eldorado Pass	20	14S	38E	4600
18E26a	Flag Prairie	32	16S	36E	4750
18E18	Lake Creek	10	16S	33½E	5120
18E22a	Logan Valley	13	16S	33½E	5100
18F1	Rock Spring	23	18S	32E	5100
18F4M	Stinking Water	33	21S	34E	4800

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS (2)

Burnt River

Number	Name	Sec.	Twp.	Rge.	Elev.
18E14	Barney Creek	16	14S	36E	5950
18E13M	Blue Mountain Summit	6	12S	36E	5098
17E1M	Dooley Mountain	32	11S	40E	5430
18E20	Eldorado Pass	20	14S	38E	4600
18E8	Gold Center	21	9S	36E	5340
18E9	Tipton	34	10S	35½E	5100

Powder River

Number	Name	Sec.	Twp.	Rge.	Elev.
18E1	Anthony Lake	18	7S	37E	7125
18E5	Bourne	33	8S	37E	5800
17E1M	Dooley Mountain	32	11S	40E	5430
18E3	Eilertson Meadows	18	8S	38E	5400
18E8	Gold Center	21	9S	36E	5340
18E6	Goodrich Lake	4	9S	38E	6775
17D12m	Ladd Summit	5	5S	39E	3730
18E23	Little Alps	10	7S	37E	6200
18D10	Summit Springs	9	6S	37E	6000
1707	Taylor Green	3	6S	42E	5740

Pine Creek

Number	Name	Sec.	Twp.	Rge.	Elev.
17D8	Schneider Meadows	35	6S	45E	5400

Grande Ronde River

Number	Name	Sec.	Twp.	Rge.	Elev.
17D1	Aneroid Lake No. 1	16	4S	45E	7480
17D2	Aneroid Lake No. 2	16	4S	45E	7300
18E1	Anthony Lake	18	7S	37E	7125
17D10a	Bald Mountain	14 & 15	4S	41E	6700
18D9	Beaver Reservoir	8	5S	37E	5340
18D8	County Line	28	4S	34E	4800
18D6	Lucky Strike	28	3S	32E	5050
18D5	Meacham	24 & 25	1S	35E	4300
17D13a	Mirror Lake	34	4S	44E	8200
17D6M	Moss Spring	28	3S	41E	5850
18D7	Schoolmarm	28	4S	34E	4775
17D11a	Standley	28	2S	42E	7400
17D7	Taylor Green	3	6S	42E	5740
18D3M	Tollgate	32	4N	38E	5070
17D15	TV Ridge	11	2S	43E	5670

Imnaha River

Number	Name	Sec.	Twp.	Rge.	Elev.
17D1	Aneroid Lake No. 1	16	4S	45E	7480
17D2	Aneroid Lake No. 2	16	4S	45E	7000
17D14	Big Sheep	33	4S	46E	6200

UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS (3)

Umatilla River

Number	Name	Sec.	Twp.	Rge.	Elev.
19D2	Arbuckle Mountain	33	4S	29E	5400
18D14m	Athena-Weston Summit	21	4N	35E	1700
18D12M	Battle Mountain Summit	29	3S	31E	4340
18D4M	Emigrant Springs	29	1N	35E	3925
18D6	Lucky Strike	28	3S	32E	5050
18D5	Meacham	24 & 25	1S	35E	4300
18D3M	Tollgate	32	4N	38E	5070
18D13	Walla Walla Diversion	22	6N	38E	2400

Walla Walla River

Number	Name	Sec.	Twp.	Rge.	Elev.
18D16	Blue Mountain Camp	35	4N	37E	4300
18D3M	Tollgate	32	4N	38E	5070
18D17	Weston Mountain	25	4N	35E	2700

Willow Creek

Number	Name	Sec.	Twp.	Rge.	Elev.
19D2	Arbuckle Mountain	33	4S	29E	5400

UPPER JOHN DAY WATERSHEDS (4)

Upper John Day River

Number	Name	Sec.	Twp.	Rge.	Elev.
18E1	Anthony Lake	18	7S	37E	7125
19D2	Arbuckle Mountain	33	4S	29E	5400
18D12M	Battle Mountain Summit	29	3S	31E	4340
19E2M	Beech Creek Summit	4	12S	30E	4800
18E16M	Blue Mountain Spring	21	15S	35E	5900
18E13M	Blue Mountain Summit	6	12S	36E	5098
19E3M	Derr	14	13S	23E	5670
18E27a	East Fork Canyon	15	15S	32E	5700
18E8	Gold Center	21	9S	36E	5340
18E24a	Indian Cr. Butte	5	15S	33E	6550
19E9	Izee Summit	28	16S	29E	5293
18D6	Lucky Strike	28	3S	32E	5050
20E1M	Marks Creek	25	12S	19E	4540
20E2	Ochoco Meadows	21	13S	20E	5200
18E7	Olive Lake	14	9S	33½E	6000
18D7	Schoolmarm	28	4S	34E	4775
19F1M	Snow Mountain	1	19S	26E	6300
19E7M	Starr Ridge	20	15S	31E	5150
18E9	Tipton	34	10S	35½E	5100
18E25M	Williams Ranch	20	15S	32E	4500

UPPER DESCHUTES, CROOKED WATERSHEDS (5)

Upper Deschutes River

Number	Name	Sec.	Twp.	Rge.	Elev.
21E11	Black Pine Spring	14	16S	9E	4600
21F8	Caldwell Ranch	30	21S	8E	4400
22F3	Cascade Summit	7	23S	6E	4880
21F7	Charlton Lake	23	21S	6E	5750
21F11	Chemult	21	27S	8E	4760
21F14	Fire Road	36	21S	11E	5050
21E6	Hogg Pass	24	13S	7½E	4755
21F4	Hungry Flat	30	18S	11E	4400
21F6	Irish-Taylor	25	20S	6E	5500
21F17	Mowich	29	25S	25E	4700
21F10	New Crescent Lake	11	24S	6E	4800
21F19	New Dutchman Flat #2	21	18S	9E	6400
21F13	Paulina Lake	34	21S	12E	6330
21F15	Paulina Prairie	28	21S	11E	4285
21F3	Tangent	28	18S	10E	5400
21E15	Three Creeks Butte	27	16S	9E	5200
21E13	Three Creek Meadows	3	17S	9E	5600
22F2	Waldo Lake	15	21S	6E	5500
22F14	Willamette Pass	33	24S	5½E	5600
22F15	Windigo Pass	20	25S	6E	5800

Crooked River

Number	Name	Sec.	Twp.	Rge.	Elev.
19E3M	Derr	14	13S	23E	5670
20E1M	Marks Creek	25	12S	19E	4540
20E2	Ochoco Meadows	21	13S	20E	5200
19F1M	Snow Mountain	1	19S	26E	6300
19E4	Tamarack	8	15S	25E	4800

HOOD, MILE CREEKS LOWER DESCHUTES WATERSHEDS (6)

Hood River

Number	Name	Sec.	Twp.	Rge.	Elev.
21D5	Brooks Meadows	2	2S	10E	4300
21D25M	Cooper Spur	6	2S	10E	3490
21D1	Greenpoint Reservoir	28	2N	9E	3400
21D20	Knebal Springs	31	1S	11E	3850
21D23	Parkdale	6	1S	10E	1770
21D8	Phlox Point	6	3S	9E	5600
21D4	Red Hill	20	1S	9E	4400
21D9	Still Creek	25	3S	8½E	3700
21D7	Tilly Jane	15	2S	9E	6000
21D21	Ulrich Ranch Junction	28	1S	11E	3350
21D24	Upper Valley	20	1S	10E	2530
21D28	Switchback	28	1S	9E	3255

Mile Creeks - Mosier Creek

Number	Name	Sec.	Twp.	Rge.	Elev.
21D6	Brooks Meadows	2	2S	10E	4300
21D20	Knebal Springs	31	1S	11E	3850
21D21	Ulrich Ranch Junction	28	1S	11E	3350

Lower Deschutes River

Number	Name	Sec.	Twp.	Rge.	Elev.
21D12	Clear Lake	29	4S	9E	3500
21E6	Hogg Pass	24	13S	7½E	4755

LOWER COLUMBIA WATERSHEDS (7)

Sandy River

Number	Name	Sec.	Twp.	Rge.	Elev.
21D8	Phlox Point	6	3S	9E	5600
21D9	Still Creek	25	3S	8½E	3700

WILLAMETTE WATERSHEDS (8)

Clackamas River

Number	Name	Sec.	Twp.	Rge.	Elev.
21D15	Big Bottom	25	6S	7E	2118
21D13	Clackamas Lake	35	5S	8½E	3400
21D12	Clear Lake	29	4S	9E	3500
21D16	Lake Harriet	4	6S	7E	2045
21D14	Peavine Ridge	14 & 15	6S	7E	3500
21D8	Phlox Point	6	3S	9E	5600
21D9	Still Creek	25	3S	8½E	3700
21D17	Timothy Lake	26	5S	8E	3295

Santiam River

Number	Name	Sec.	Twp.	Rge.	Elev.
22E1	Detroit (town)	1	10S	5E	1610
22E2	Detroit Dam	7	10S	5E	1580
21E6	Hogg Pass	24	13S	7½E	4755
21E4	Marion Forks	28	11S	7E	2730
22E3	Mill City	29	9S	3E	826
21E5	Santiam Junction	14	13S	7E	3990
21E3	Whitewater Bridge	28	10S	7E	2175

McKenzie River

Number	Name	Sec.	Twp.	Rge.	Elev.
21E8	Dead Horse Grade	13	16S	7E	3800
22E4	Lost Creek Ranch	24	16S	6E	1956
21E7	McKenzie	35	15S	7½E	4800
22E5	McKenzie Bridge	13	16S	5E	1372
22E6	Vida	28	16S	2E	800
21E9	White Branch Slide	15	16S	7E	2800

Middle Fork Willamette River

Number	Name	Sec.	Twp.	Rge.	Elev.
22F3	Cascade Summit	7	23S	6E	4880
22F6	McCredie Springs	26	21S	4E	2120
22F8	Meridian Dam	13	19S	1W	[illegible]
22F[illegible]	Oakridge	16	21S	3E	1310
22F5	Railroad Overpass	27	22S	[illegible]E	2750
22F4	Salt Creek Falls	33	22S	6E	[illegible]
22F2	Waldo Lake	15	21S	6E	5500
22F14	Willamette Pass	33	24S	5½E	5600

Coast Fork Willamette River

Number	Name	Sec.	Twp.	Rge.	Elev.
22F9	Champion	12	23S	1E	4500
22F10	Golden Curry Creek	1	23S	1E	3136
22F13	Layng Creek R. S.	31	21S	1E	1200
22F12	Lund Park	22	22S	1E	1740
22F11	Weaver Creek	35	22S	1E	2440

Mary's River

Number	Name	Sec.	Twp.	Rge.	Elev.
23E1	Mary's Peak	21	12S	7W	3620

ROGUE, UMPQUA WATERSHEDS (9)

Rogue River

Number	Name	Sec.	Twp.	Rge.	Elev.
23G4	Althouse	17	41S	7W	4530
22G6	Annie Spring	19	31S	6E	6018
22G28	Beaver Dam Creek	1	38S	4E	5100
22G21	Big Red Mountain	31	40S	1W	6500
22G13	Billie Creek Divide	30	36S	5E	5300
22G27	Deadwood Junction	8	38S	4E	4600
22F19	Diamond-Crater Summit	34	28S	6E	5800
22G14	Fish Lake	3	37S	4E	4865
22G12	Fourmile Lake	9	36S	5E	6000
23G3	Grayback Peak	9	40S	5W	6000
22G17	Hobart Lake	17	40S	3E	5010
22G26	Howard Prairie	32	38S	4E	4500
22G16	Hyatt Prairie Reservoir	15	39S	3E	4900
22G22	Little Red Mountain	25	40S	2W	6500
23G5	Page Mountain	8	41S	7W	4045
22G5	Park Headquarters	8	31S	6E	6450
22G29	Rye Spring Spur	33	36S	4E	5000
22G10	Seven Lakes No. 1	3	34S	5E	6800
22G11	Seven Lakes No. 2	26	33S	5E	6200
22G2	Silver Burn	30	30S	4E	3720
22G20	Siskiyou Summit	17	40S	2E	4630
22G9	South Fork Canal	12	33S	3E	3500
22G18	Wagner Butte	1	40S	1W	6900
22G1	Whaleback	3	31S	2E	5140

Umpqua River

Number	Name	Sec.	Twp.	Rge.	Elev.
22F9	Champion	12	23S	1E	4500
22F18	Diamond Lake	29	27S	6E	5315
23G7	Eden Valley Summit	10	32S	10W	2390
22F16	North Umpqua	19	26S	6E	4215
22F23	Red Butte No. 1	36	27S	2W	4560
22F24	Red Butte No. 2	30	27S	1W	4000
22F25	Red Butte No. 3	30	27S	1W	3500
22F26	Red Butte No. 4	36	27S	1W	3000
22F27	Red Butte No. 5	20	27S	1W	2500
22F28	Red Butte No. 6	17	27S	1W	2000
22F17	Trap Creek	1	27S	4E	3800
22G1	Whaleback	3	31S	2E	5140
22F15	Windigo Pass	20	25S	6E	5800

KLAMATH WATERSHEDS (10)

Klamath River

Number	Name	Sec.	Twp.	Rge.	Elev.
22G6	Annie Spring	19	31S	6E	6018
22G13	Billie Creek Divide	30	36S	5E	5300
21G5	Bly Mountain	15 & 22	37S	11E	5090
21F11	Chemult	21	27S	8E	4760
22G24	Cold Springs Camp	12	35S	5E	6100
20G12a	Crazyman Flat	9	34S	15E	6100
20H2a	Crowder Flat (Cal)	30	47N	11E	5200
22F19	Diamond-Crater Summit	34	28S	6E	5800
21F18	Diamond Lake Jct. (97)	1	29S	7E	4600
21G6a	Dog Hollow	1	40S	14E	4900
20G14a	Finley Corrals	11	36S	16E	6000
22G12	Fourmile Lake	9	36S	5E	6000
21G4	Gerber	12	39S	13E	4850
22G16	Hyatt Prairie Reservoir	15	39S	3E	4900
22G26	Howard Prairie	32	38S	4E	4500
22G15	Lake of the Woods	11	37S	5E	4960
22G5	Park Headquarters	8	31S	6E	6450
22G25	Pelican Guard Station	9	36S	6E	4150
20G6M	Quartz Mountain	2	38S	16E	5320
22G10	Seven Lakes No. 1	3	34S	5E	6800
22G11	Seven Lakes No. 2	26	33S	5E	6200
20H1a	State Line (Cal)	21	48N	11E	5750
20G9A	Strawberry	4	40S	16E	5600
20G2A	Summer Rim	15	33S	16E	7200
21G2	Sun Mountain	22	32S	7½E	5350
20G13a	Sycan Flat	25	31S	14E	5500
21G3	Taylor Butte	16	33S	11E	5100

Pacific Power and Light Company's Snow Stations

Number	Name	Sec.	Twp.	Rge.	Elev.
1	Beatty (PP&L)	22	36S	12E	4300
10	Bly Mtn Ranch (PP&L)	22	35S	14E	4800
3	Chiloquin (PP&L)	34	34S	7E	4187
[illegible]	Crystal (PP&L)	26	34S	6E	4200
5	Fort Klamath (PP&L)	22	33S	7½E	4150
[illegible]	Kirk (PP&L)	1	33S	7E	4533
[illegible]	Quartz Mountain (PF&L)	33	37S	16E	5504
[illegible]	Harriman Lodge (PP&L)	3	36S	6E	4200
12	Yansey (PP&L)	20	31S	11E	4600

LAKE COUNTY, GOOSE LAKE WATERSHEDS (11)

Goose Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
20G15a	Bear Flat Meadow	27	36S	19E	5900
20G8M	Camas Creek	5	39S	21E	5720
20G11a	Cox Flat	16	37S	18E	5750
20G16a	Crane Mountain	13	40S	21E	6020
20H2a	Crowder Flat (Cal)	30	47N	11E	5200
20H3a	Dismal Swamp (Cal)	31	48N	16E	7000
20G17a	Patton Meadow	28	38S	18E	6800
20G6M	Quartz Mountain	2	38S	16E	5320
20H1a	State Line (Cal)	21	48N	11E	5750
20G9A	Strawberry	4	40S	16E	5600

Abert Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
20G15a	Bear Flat Meadow	27	36S	19E	5900
20G11a	Cox Flat	16	37S	18E	5750
20G14a	Finley Corrals	11	36S	16E	6000
20G4	Mill Creek	1	34S	17E	6200
20G6M	Quartz Mountain	2	38S	16E	5320
20G10a	Sherman Valley	15	37S	21E	6600

Summer Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
20G2A	Summer Rim	15	33S	16E	7200

Silver Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
21F12	Silver Creek	25 & 26	29S	13E	4900
20G13a	Sycan Flat	25	31S	14E	5500

Warner Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
20G8M	Camas Creek	5	39S	21E	5720
20G16a	Crane Mountain	13	40S	21E	6020
20H3a	Dismal Swamp (Cal)	31	48N	22E	7000
19G1a	Hart Mountain	1	36S	25E	6350
20G10a	Sherman Valley	15	37S	21E	6600

Guano Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
19H1	Bald Mountain (Nev)	17	45N	21E	6720
19G1a	Hart Mountain	1	36S	25E	6350
19H4a	Little Bally Mt. (Nev)	8	45N	19E	6600

HARNEY BASIN WATERSHED (12)

Silvies River - Silver Creek

Number	Name	Sec.	Twp.	Rge.	Elev.
18F7a	Call Meadows	29	20S	33E	5340
19F2	Delintment Lake	28	19S	26E	5600
19F3	Emigrant Butte	14	21S	27E	5000
18F3	Idlewild Camp	27	20S	31E	5200
19E9	Izee Summit	28	16S	29E	5293
18F1	Rock Spring	23	18S	32E	5100
19F1M	Snow Mountain	1	19S	26E	6300
19E7M	Starr Ridge	20	15S	31E	5150
18F4M	Stinking Water	33	21S	34E	4800
19F4m	Willow-Bald	19	22S	29E	5000

Donner Und Blitzen River

Number	Name	Sec.	Twp.	Rge.	Elev.
18F6a	Buck Pasture	21	29S	35E	5700
18G2MA	Fish Creek	4	33S	33E	7900
19G1a	Hart Mountain	1	36S	25E	6350
18G1MA	Silvies	35	32S	32½E	6900
18G7a	"V" Lake	31	35½S	32½E	6600

Trout and Whitehorse Creeks

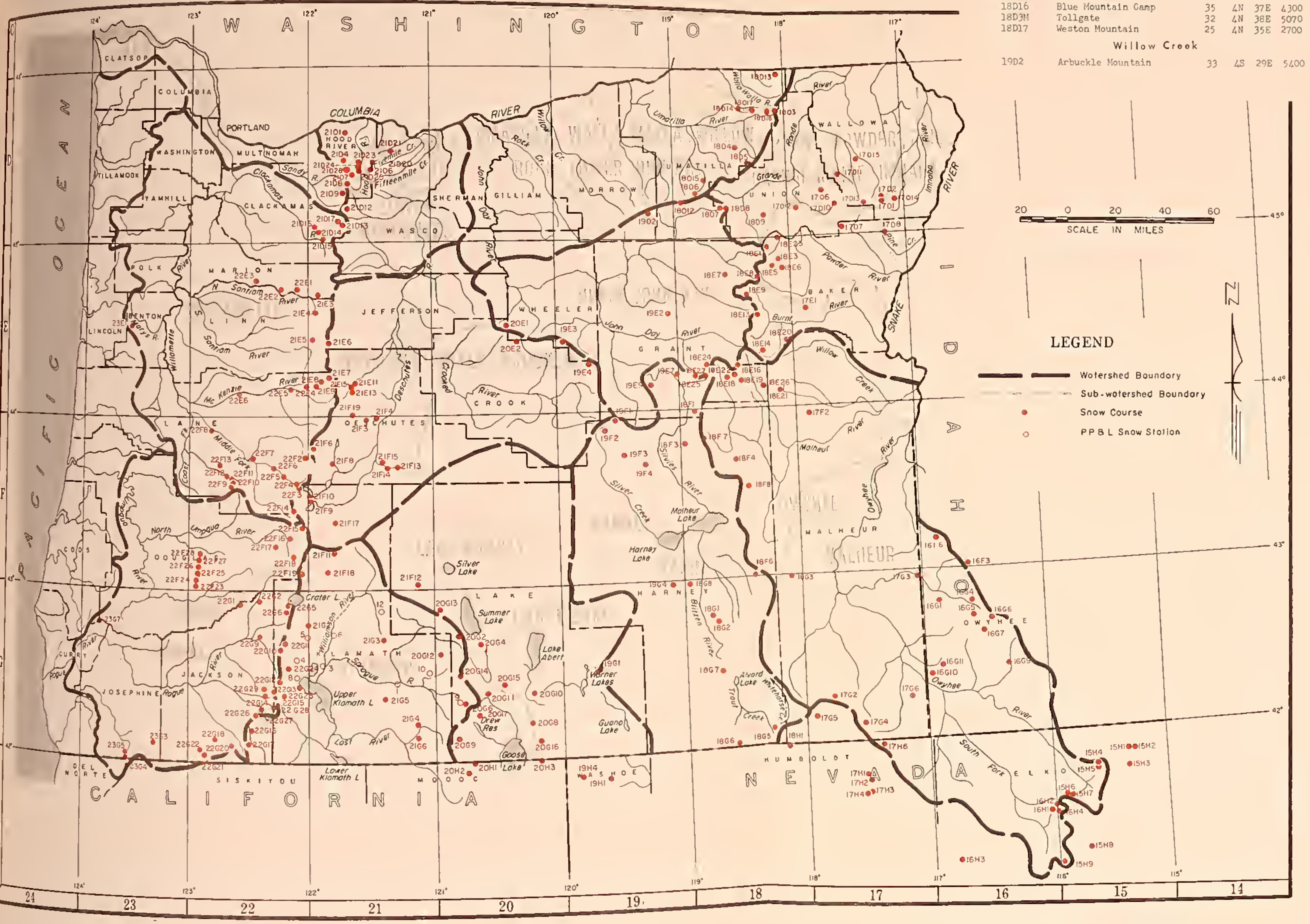
Number	Name	Sec.	Twp.	Rge.	Elev.
18G6a	Denio Creek	14	41S	34E	6000
18H1	Disaster Peak (Nev)	8	47N	34E	6500
17G5a	Oregon Canyon	9	40S	40E	6950
18G5a	Trout Creek	10	41S	38E	7800

Harney Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
18G8	Buckskin Lake	2	30S	30E	5200
19G4	Foster Flat	15	30S	29E	5020

LEGEND

1902	SNOW COURSE ONLY
1902M	SNOW COURSE AND SOIL MOISTURE
1902MA	SNOW COURSE, SOIL MOISTURE AND AERIAL MARKER
1902A	SNOW COURSE AND AERIAL MARKER
1902●	SOIL MOISTURE ONLY
1902▲	AERIAL MARKER ONLY



Map and Index to OREGON SNOW COURSES

7-5-19101-0

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE USDA-SCS PORTLAND OREG 1963 M-1874

The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE
- Idaho Cooperative Snow Surveys
- Nevada Cooperative Snow Surveys
- Oregon State University
- Oregon State Engineer and Corps of State Watermasters
- Oregon State Highway Engineers
- Soil Conservation Districts of Oregon

COUNTY
- Douglas County Water Resources Survey

FEDERAL
- Department of Agriculture
  - Cooperative Extension Service
  - Forest Service
  - Soil Conservation Service
- Department of Commerce
  - Weather Bureau
- Department of the Interior
  - Bonneville Power Administration
  - Bureau of Land Management
  - Bureau of Reclamation
  - Fish and Wildlife Service
  - Geological Survey
  - National Park Service
- Department of National Defense
  - Corps of Army Engineers

PUBLIC UTILITIES
- Pacific Power and Light Company
- Portland General Electric Company
- California-Pacific Utilities Company

MUNICIPALITIES
- City of Baker
- City of La Grande
- City of The Dalles
- City of Walla Walla

IRRIGATION DISTRICTS
- Arnold Irrigation District
- Associated Ditch Companies
- Burnt River Irrigation District
- Central Oregon Irrigation District
- East Fork Irrigation District
- Grants Pass Irrigation District
- Jordan Valley Irrigation District
- Lakeview Water Users, Incorporated
- Medford Irrigation District
- North Board of Control - Owyhee Project
- North Unit Irrigation District
- Ochoco Irrigation District
- Rogue River Valley Irrigation District
- South Board of Control - Owyhee Project
- Squaw Creek Irrigation District
- Talent Irrigation District
- Tumalo Project
- Vale-Oregon Irrigation District
- Warmsprings Irrigation District

PRIVATE ORGANIZATIONS
- Amalgamated Sugar Company
- The Crag Rats, Hood River, Oregon

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SOIL CONSERVATION SERVICE
ROSS BLDG., 209 S.W. 5TH AVE.
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Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"The Conservation of Water begins with the Snow Survey"